

A scanning electron micrograph (SEM) showing numerous rod-shaped E. coli bacteria. The bacteria are oriented in various directions, some appearing in pairs or small clusters. The surface of the bacteria shows fine, longitudinal ridges. The background is dark, making the light-colored bacteria stand out.

2018

Guidance for food business operators and local authorities

***E.coli* 0157**

Control of cross-contamination



Food
Standards
Agency

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Summary

Intended audience	<p>This guidance is for local authorities and all types of businesses that handle both raw foods (that can be a source of pathogens including <i>E. coli</i> O157) and ready to eat foods.</p> <p>For example:</p> <ul style="list-style-type: none">• manufacturers and processors• retailers• restaurants and takeaways• caterers (including movable and / or temporary premises and premises used primarily as a private house)• carers and childminders
Which UK nations does this cover?	<p>This guidance applies to:</p> <ul style="list-style-type: none">• England• Wales• Northern Ireland
Purpose and how to use this guidance	<p>The purpose of this document is to provide guidance on the steps that food businesses should take to control contamination between raw foods that are a potential source of <i>E. coli</i> O157 and ready to eat foods. Following this guidance will also help control cross-contamination from a range of other foodborne bacteria such as Campylobacter, Salmonella and other pathogenic <i>E. coli</i> strains. Ultimately providing safer food for all consumers.</p> <p>The measures required to control cross-contamination will vary between different businesses and should be proportionate to the risk posed in accordance with the specific activities carried out, such that:</p> <p>A food business operator must undertake an appropriate analysis of the activities within the business likely to cause food to be contaminated with <i>E. coli</i> O157 and must put into place appropriate steps to control these activities to ensure food safety. This guidance provides clear instruction that food businesses can follow depending on what is achievable and appropriate in their particular business. The controls that are considered necessary should be discussed with their local authority, and where relevant primary authority, who can provide advice.</p> <p>A local authority should ensure that food business operators have adequate controls in place to reduce the risk of cross-contamination and ensure the safe production of food. This will include having full regard to the circumstances of each particular business. If a food business has a primary authority the local authority should liaise with that authority to ensure that an informed and consistent approach is taken. Where appropriate local authorities will have due regard to the Regulator's Code when determining the control measures in place.</p>

Structure of the guidance and legal status	<p>The information on the structure of this document can be found at 'How to use this guide'.</p> <p>This document provides guidance on compliance with applicable food hygiene legislation contained in Regulation (EC) No 852/2004 and good practice recommendations.</p> <p>This document is guidance and not law. Businesses and Local Authorities should refer to the laws that this guidance is based on.</p>
Key words	Food Law, Monitoring, Controls, Separation, Staff Training, Hygiene, Food Safety, <i>E. coli</i>, Cross-contamination

Revision history

Revision number	Revision date / change details
Version 1	2012 First publication
Version 2	2013 Full review
Version 3	2014 Full review, format changes and updated guidance for dual use of complex equipment.
Version 4	TBA Format changed, improved accessibility and clarification of language. Increased number of diagrams / information to ease understanding. Clarification of guidance for separation and chemical disinfection.

How to use this guide

The guidance is laid out in a format designed to allow businesses to consider their processes and whether their current or proposed arrangements comply with hygiene regulations. This guide will also help regulators to reference legal requirements and the relevant legislation. The guidance is laid out in three areas:

'The law' – This quotes the relevant specific legal requirements. It is detailed in the blue box on the left of the page.

'How to comply with the law' – This outlines what should be done to comply with the law. Businesses may find other ways to comply with the law, however you will need to check with your local authority if these are acceptable.

'Good practice' – This outlines good practices that businesses may want to implement. There may be further actions necessary to achieve good practice. Where good practice is implemented this should be additional to the arrangements mentioned in 'how to comply'.

This guide has been laid out in a format to allow businesses to find advice quickly. As a consequence, legal requirements quoted in '**The law**' may appear in more than one place, and appropriate additional guidance may be found elsewhere in the document. Other guidance is available from government agencies and other reliable sources.

A full glossary of legal definitions and other technical terms used has been provided at the end of this guide.

The information in the guidance document is to help food businesses comply with the law and reduce the risk of a cross-contamination incident. If you would like further information about how to comply with the law you should contact your local authority. You can find contact details of your local authority here:

<https://www.food.gov.uk/enforcement/find-food-safety-team>

Informational boxes

We have included additional information in blue popout boxes. All of these boxes are to highlight good practice to food businesses aiding to control the risk of cross-contamination. They are not a legal requirement.

This guide is also for local authority officers. When carrying out interventions with food businesses, the officer should offer advice on '**How to comply with the law**' and '**Good practice**'. When enforcement action is needed the Environmental Health Officers should refer to the corresponding regulation detailed in '**The law**' bar for each section.

Acknowledgments

Various versions of this guidance have been reviewed in consultation with representatives of the following groups:

- All Wales Food Safety Expert Panel
- British Hospitality Association (BHA)
- British Retail Consortium (BRC)
- Federation of Small Businesses (FSB)
- National Farmers' Retail & Markets Association (FARMA)
- National Farmers Union (NFU)
- National Food Hygiene Focus Group representing local authorities in UK
- Northern Ireland Food Managers Group
- Royal Environmental Health Institute of Scotland (REHIS)
- Scottish Food Enforcement Liaison Committee (SFELC)
- The Chartered Institute of Environmental Health (CIEH)

We would like to acknowledge the helpful contributions provided by all. In addition thanks to all those who read and commented on the drafts.

Introduction

The Food Standards Agency (FSA) has produced this guidance to help food businesses comply with food hygiene legislation and to control cross-contamination with *Escherichia coli* O157 (hereafter called *E. coli* O157). This guidance is designed to assist food businesses in producing food that is safe to eat and in turn, protect consumers.

The guidance clarifies the control measures that need to be applied by food businesses to avoid ready to eat food from being contaminated with *E. coli* O157.

E. coli O157 is a harmful bacterium that is particularly dangerous because it can survive refrigeration and freezing and has been shown to be tolerant of acid, salt and dry conditions.

By following the steps in the guidance, a food business can control the transfer of *E. coli* O157 which may be present in food products such as raw meat and raw vegetables, to other food products which are ready to eat.



If food businesses follow the steps provided in this guide it should aid the control of cross-contamination.

If consumed, even at very low doses, contaminated products can lead to death or serious untreatable illness. Even after recovery from infection, some cases are left with permanent kidney or brain damage. Whilst all people are liable to illness following the consumption of contaminated food products, special care should always be given to circumstances where vulnerable groups, such as young children or the elderly are the principal consumers of food within an establishment, for example, schools or residential / nursing care homes. The risk of cross-contamination with *E. coli* O157 must be considered and controlled in any food business where both raw and ready to eat foods are handled.



Vulnerable risk groups are those that include people likely to be more susceptible to the effects of poor food hygiene such as those who are under five or over 65 and people who are sick or immuno-compromised.

E. coli O157 is a hazard that needs to be controlled through the business' food safety management system. To help businesses comply with this requirement the guidance explains:

- the circumstances in which *E. coli* O157 cross-contamination hazards should be considered
- the control measures that can be applied to control cross-contamination with *E. coli* O157
- that if such controls fail, there is an imminent risk to consumers with potentially severe consequences

The control measures required will vary between different businesses and should be proportionate to the risk posed in accordance with the specific activities of the business.

Your local authority will be able to advise on the control measures required in a specific business.

This guidance lays down the legal requirements and the FSA's interpretation of how to meet these requirements. It also includes good practice which go further than the legal requirements.

Businesses are advised to follow this guide to compliance. It is the responsibility of the food business operator (FBO) to demonstrate to their local authority how they have complied with the guidance. Businesses who choose to comply with the regulations in other ways will need to demonstrate to the local authority how these processes work.

Who is this guidance for?

This guidance is for all types of businesses that handle both raw foods (that can be a source of *E. coli* O157) and ready to eat foods.

It will also help local authority officers assess the risk of cross-contamination with *E. coli* O157, when carrying out interventions at food businesses.

The guidance **does not apply** to the following types of food businesses:

- **primary producers** and **growers** (for example farmers)
- **food businesses** that handle **only pre-wrapped / pre-packaged** food in a way that prevents cross-contamination, such as distributors
- **warehouses** and **some retailers** where open food is not handled or packed on site
- **approved manufacturing processors** such as cheese manufacturers or raw milk processors (such as those pasteurising milk), which already have their own established systems in place to control cross-contamination

However, these businesses are still required to comply with food hygiene regulations and are recommended to follow industry specific guidance on good hygiene practices. Further information may be found at the FSA official website:

<https://www.food.gov.uk>

What is cross-contamination?

Cross-contamination is the spread of pathogens (germs) from foods, hands, utensils, or food preparation surfaces to another food. Cross-contamination is one of the most common causes of food poisoning.

E. coli O157 bacteria and other dangerous *E. coli* mostly live in the intestines of animals. As animals usually live in fields, soil can become contaminated with bacteria such as *E. coli* O157.



An example of cross-contamination could be touching something such as raw meat then touching something that is ready to eat (such as cooked food). The *E. Coli* from the raw meat would contaminate the cooked food.

Types of cross-contamination

There are two types of cross-contamination, direct and indirect. Direct sources include:

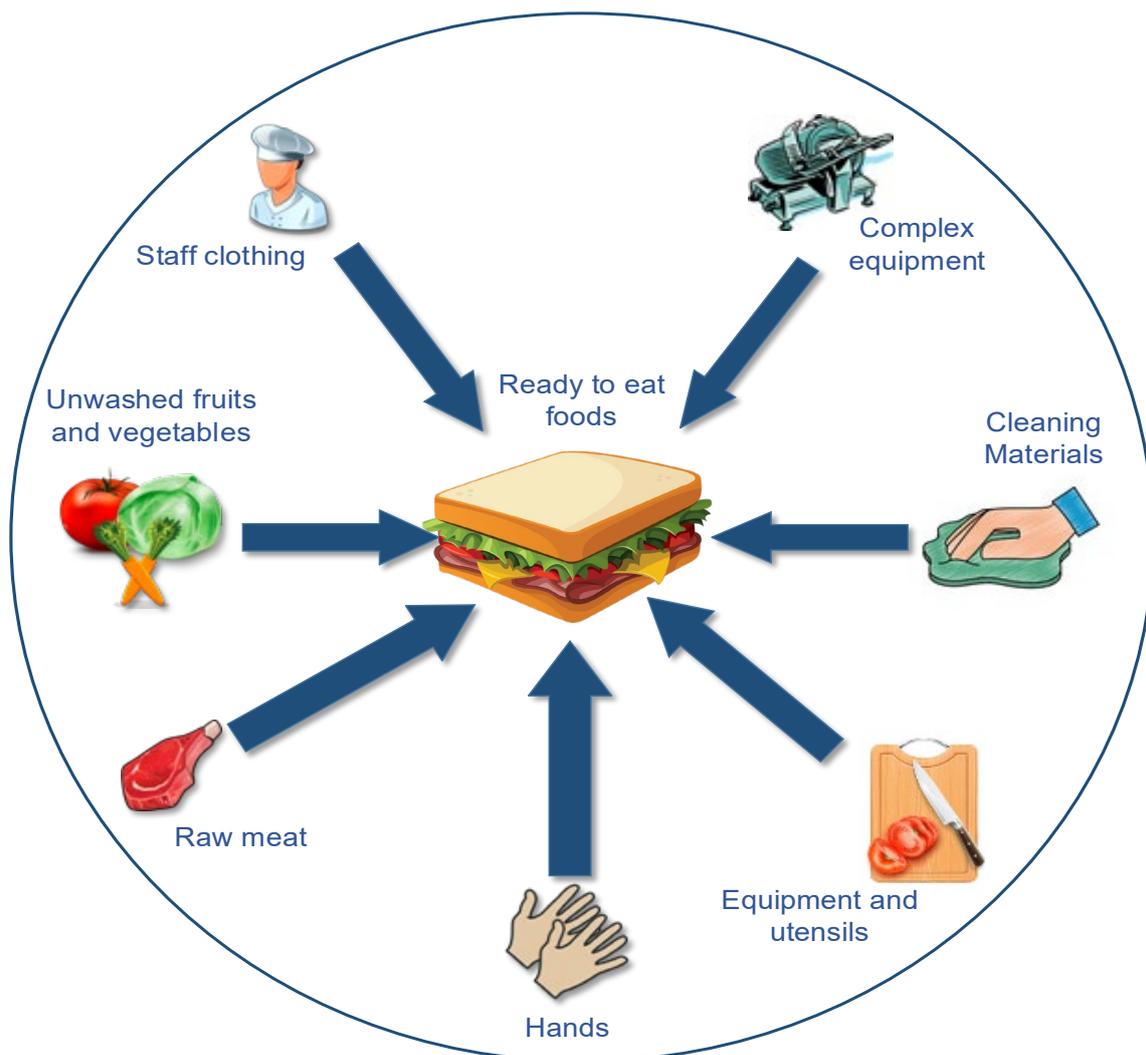
- raw meat
- vegetables that have soil on them

Sources of indirect include:

- surfaces
- hands
- equipment that has been used for raw food
- anything else that has been contaminated

For more information about the sources of *E. coli* see '**Sources of *E. coli* O157 in food**'.

This diagram shows examples of cross-contamination.



Steps to control cross-contamination

The key control measures outlined in this guidance to control *E. coli* O157 cross-contamination are:



Separation

Separation between raw and ready to eat food, contact surfaces and equipment.



Effective Cleaning

Effective cleaning and disinfection procedures will help prevent the possibility of pathogens remaining on work surfaces and equipment.



Good Personal Hygiene

Personal hygiene (particularly hand washing) is essential in tackling the spread of potential pathogens directly from those handling food and equipment.



Staff Training

Staff should be trained about the risks of cross-contamination and how to prevent it.



Management Controls

Effective management controls and processes should be in place to prevent cross-contamination. These include detailed HACCP plans and cleaning schedules. For help with this check out the FSA's [Safer food, better business](#) packs.

Sources of *E. coli* in food

E. coli O157 can be found in the following sources, and all these products are required to be handled as if *E. coli* O157 is present.

Raw meat – *E. coli* O157 is most commonly associated with beef, lamb, goat and venison but it has also been found in pork, poultry and the offal of all the animal species mentioned. Raw bacon must be handled as raw meat because the salting / curing process will not guarantee the removal of harmful bacteria.

Fresh Produce – Fruits and vegetables, in general, must be treated as a potential source of *E. coli* O157, unless it specifically states on the label 'ready to eat'. To make them safe to eat they will need to undergo an adequate washing and /or processing treatment (for example cooking).

Washing will help to remove bacteria including *E. coli* from the surface of fruit and vegetables. Most of the bacteria will be in the soil attached to the produce. So, washing to remove any soil is very important. When washing vegetables, do not just hold them under the running tap, rub them under water, for example in a bowl of fresh water starting with the least soiled items first and then give each of them a final rinse. Washing loose produce is particularly important as it tends to have more soil attached to it than pre-packaged fruit and vegetables.

Fresh produce that is not supplied as ready to eat is to be handled, stored and displayed in such a way that it does not contaminate ready to eat foods. Special attention is required when storing soiled vegetables to ensure that they do not contaminate other produce that may not be supplied as ready to eat but are likely to be consumed raw (for example fruits such as strawberries or raspberries).

Soil where fresh produce grows can become contaminated with bacteria such as *E. coli* O157 which can transfer to fruits and vegetables. Root crops (e.g. potatoes and carrots) and leafy vegetables (e.g. lettuce and cabbage) sold loose are likely to have the most soil on the outside.



Fruits and vegetables that have been supplied as ready to eat should already have been subjected to controlled procedures to ensure that they do not present a risk to health. It is not necessary to re-wash them and re-washing is not recommended as it could introduce an additional cross-contamination risk.

You can find more information about washing fruits and vegetable on the [NHS website](#).

Raw milk – Raw milk and raw milk products supplied to a food business should always be treated as a potential source of contamination. Cheese manufactured from unpasteurised/raw milk and supplied as a ready to eat product should also be treated as a potential source of contamination. The processing of unpasteurised/raw milk in the manufacture of ready to eat products is beyond the scope of this guidance.

Untreated water supplies – Water can be an important source of microbiological hazards because harmful bacteria may survive in water for months. Water supplied to food businesses, including private supplies, must meet potable water standards

Separation

The design of all food businesses should permit good food hygiene practices, including protection against contamination with *E. coli* O157 and other harmful bacteria.

It should be assumed that raw foods brought into a business will be contaminated with bacteria including *E. coli* O157 and may result in *E. coli* O157 being introduced into the food business. Food businesses are required to identify the controls required to prevent the bacteria from contaminating ready to eat foods.

The most effective control to minimise the risk of contamination from *E. coli* O157 onto ready to eat food is the **complete separation** of staff, storage areas, preparation tables, utensils and equipment. This means there will be no contact between people handling ready to eat foods and those involved in the preparation of foods which may be contaminated with *E. coli* O157. You should consider having the following separate items for both raw and ready to eat foods:

- work and storage areas
- food contact surfaces
- equipment
- utensils
- staff

There will be circumstances where complete physical separation is not possible, and other controls will be necessary. For example, temporary separation arrangements, space or time separation, cleaning and disinfection between uses.

Where possible the work rota for the preparation of ready to eat foods must be put in place to minimise any risk of cross-contamination. This means that all ready to eat food should be prepared first and either served for immediate consumption or chilled. Then the food preparation area can be used for the preparation of raw meat and other raw vegetables that require cooking.

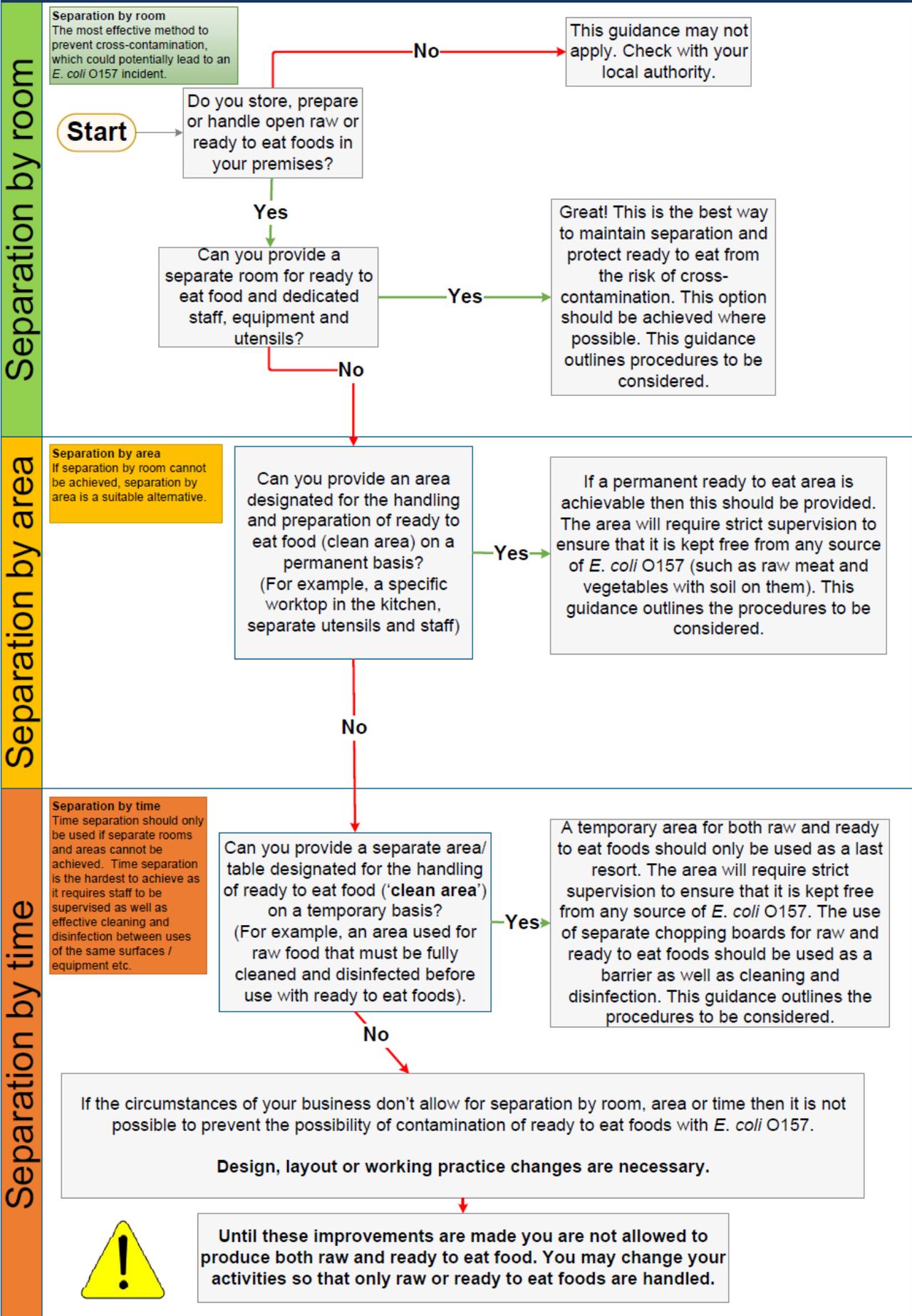
When using time separation as a control there must not be any ready to eat foods in the work preparation area when it is being used for raw foods. The work preparation area must be visually clean. All equipment and utensils must also be clean.

Prior to any food handling, all staff and visitors must wash their hands thoroughly. Staff should be regularly reminded about the need for good personal hygiene and supervised to ensure the required standards are met. See '**Staff**' and '**Personal hygiene and handling practices**' for more information.

Raw food contaminated with *E. coli* O157 may transfer bacteria to ready to eat foods either by:

- direct contact through unsafe handling and storage
- indirect contact through staff movement and poor personal hygiene
- unsafe use of equipment, utensils and food contact surfaces

Separation of Areas Decision Tree – What is achievable?



The law

Regulation (EC) No 852/2004
Annex II

Chapter I

(2) the layout, design, construction, siting and size of food premises are to:

(a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations

(c) permit good food hygiene practices, including protection against contamination and, in particular, pest control.

Chapter II

(1) In rooms where food is prepared, treated or processed (excluding dining areas and those premises specified in Chapter III, but including rooms contained in means of transport) the design and layout are to permit good food hygiene practices, including protection against contamination between and during operations. In particular:

(f) surfaces (including surfaces of equipment) in areas where foods are handled and in particular those in contact with food are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable corrosion-resistant and non-toxic materials, unless food business operators can satisfy the competent authority that other materials used are appropriate.

Chapter III

Requirements for movable and/or temporary premises (such as marquees, market stalls, mobile sales vehicles), premises used primarily as a private dwelling-house but where foods are regularly prepared for placing on the market and vending machines.

Food preparation rooms / areas

When both raw and ready to eat foods are handled and prepared from the same premises, there must be effective procedures in place to prevent cross-contamination.

How to comply with the law

This will depend on the business activities, and what is achievable for the business. See the '**Separation**' section to help you determine what is the best option.

The options are:

Using a **permanent separate room** for preparing raw foods and another for ready to eat foods. This room should have dedicated storage facilities, staff, equipment, utensils and sinks for the handling and preparation of either ready to eat food or raw food

1. Using an **area designated for the handling and preparation of ready to eat food** (also referred to as 'clean area') on a permanent basis. The area must be of sufficient size for the operations carried out, and suitably constructed and installed in such a way as to ensure that ready to eat foods can be effectively protected from any potential contamination (for example located sufficiently away from areas where splashing may contaminate ready to eat foods).
2. Using an **area designated for ready to eat foods based on time separation** (also referred to as a 'temporary clean area'). This area will have been cleaned and disinfected between uses. See '**Cleaning and disinfection**' section for the required standards before being used for ready to eat foods. When taking this option, the following needs to be taken into consideration:
 - Time separation is to be managed in such a way that ensures contamination from *E. coli* O157 has been effectively removed from all surfaces (including staff hands) that come into contact with ready to eat foods.
 - Worktops must be thoroughly cleaned and disinfected after the area has been used to prepare raw foods before it can be used for ready to eat foods. Depending on the activities carried out it might also be required to clean and disinfect the walls in the area.
 - When using time separation, work surfaces must not be used as food contact surfaces. A suitable barrier, such as a chopping board or a container, should be used as the surface directly in contact with food.

The law (cont.)

(1) Premises are, so far as it is reasonably practicable, to be so sited, designed, constructed and kept clean and maintained in good repair and condition as to avoid the risk of contamination...

(2) In particular, where necessary:

(b) surfaces in contact with food are to be in sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable, corrosion-resistant and non-toxic materials, unless food business operators can satisfy the competent authority that other materials used are appropriate;

(h) foodstuffs are to be placed as to avoid the risk of contamination so far as is reasonably practicable.

- The spaces above and below the work surface will need to be taken into consideration to avoid anything stored in them becoming contaminated or becoming a potential source of contamination.

Good practice

It is recommended that separate areas are provided for raw and ready to eat foods. Where practicable, use separate rooms that include:

- separate fridges, freezers, display units
- separate designated staff / uniforms
- separate designated utensils
- separate sinks
- separate wash hand basins

When time separation is used, it is recommended, where possible, to prepare ready to eat foods first in a designated area before undertaking preparation of raw foods

The law

Regulation (EC) No 852/2004
Annex II Chapter IX

(2) Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.

(3) At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.

(5) Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted. However, limited periods outside temperature control are permitted, to accommodate the practicalities of handling during preparation, transport, storage, display and service of food, provided that it does not result in a risk to health. Food businesses manufacturing, handling and wrapping processed foodstuffs are to have suitable rooms, large enough for the separate storage of raw materials from processed material and sufficient separate refrigerated storage.

Storage and display

If possible, use separate storage and display facilities for raw and ready to eat foods.

How to comply with the law

Same storage (for example same fridge / freezer) or display units can be used for raw and ready to eat foods if the storage space is of sufficient size and the storage is planned in such a way that contamination is avoided.

Adequate separation within storage and display will often mean raw food must be stored below ready to eat food unless other measures are in place to ensure that cross-contamination can be avoided.

Door handles can be a potential source of cross-contamination and should be included on cleaning checklists / schedules.

If the food stored is wrapped or packaged, attention needs to be paid to the integrity and condition of the packaging to avoid the possibility of it becoming a source of contamination, for example damaged or soiled packaging.

Staff need to be instructed on adequate separation within storage and display equipment so that they are clear on where to store food safely.

Good practice

It is good practice to use separate storage and display facilities including refrigerators, freezers and display units for raw and ready to eat foods.

It is good practice to store raw and ready to eat foods in separate designated areas even if the food is in sealed containers.

One way to control the potential risk of cross-contamination from door handles is to get staff that handle raw foods to wash their hands before touching door handles.

Ensure packaging is robust, not damaged or leaking and food is checked regularly to ensure integrity and adequate condition of packaging.

It is good practice to label designated areas to make them clearly identifiable to all staff as being for the storage of ready to eat or for the storage of raw foods.

The law

Regulation (EC) No 852/2004
Annex II Chapters II, III and V

Chapter II

(2) Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.

Chapter V

(1) All articles, fittings and equipment with which food comes into contact are to:

(a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;

(b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;

Chapter III, Requirements for movable and/or temporary premises...

(2) in particular, where necessary:

(c) adequate provision is to be made for the cleaning and, where necessary, disinfecting of working utensils and equipment'

Equipment and utensils

How to comply with the law

If equipment and utensils (for example chopping boards, containers, tongs) are to be used for raw and ready to eat foods, they should be disinfected by heat or an adequate dishwasher cycle between uses. See 'Cleaning and disinfection' for more information.

If heat disinfection or a dishwasher is not possible, separate equipment and utensils should be used for handling raw and ready to eat foods and must be stored and washed separately.

Equipment, utensils, dishes and wrapping materials used for ready to eat foods are not to be stored in open storage (i.e. a storage area that cannot be closed) underneath a worktop where preparation of raw foods is undertaken as this could lead to cross-contamination.

Good practice

It is strongly recommended that businesses have dedicated separate equipment and utensils for raw and ready to eat foods and these should be easily identifiable, for example colour coded.

Equipment and utensils should be washed in a dishwasher following the manufacturer's instructions.

The law

Regulation (EC) No 852/2004
Article 5

Article 5

Hazard analysis and critical control points

(2) The HACCP principles consist of the following:

(a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels;

(b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or reduce it to acceptable levels;

(c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identifiable hazards.

Annex II Chapter IX

(3) At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.

(5) Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted. However, limited periods outside temperature control are permitted, to accommodate the practicalities of handling during preparation, transport, storage, display and service of food, provided that it does not result in a risk to health. Food businesses manufacturing, handling and wrapping processed foodstuffs are to have suitable rooms, large enough for the separate storage of raw materials from processed material and sufficient separate refrigerated storage.

Complex equipment

When we refer to 'complex equipment' we mean any equipment that can be very difficult to clean adequately between uses. For example, it may be because it is hard to access all parts of the equipment or because they are made up of a number of small parts and surfaces, which may not be smooth or easy to clean. For example, slicers, mincers and vacuum packing machines.

There is a risk of cross-contamination where the same piece of complex equipment is used to process raw and ready to eat foods.

Depending on the complexity of equipment the contamination may not be adequately removed during routine cleaning and disinfection process and can result in any ready to eat foods subsequently processed becoming contaminated.

How to comply with the law

Food business operators must ensure that:

vacuum packers, slicers and mincers are not to be dual used unless the equipment is fully dismantled and disinfected between uses as there is a risk of cross-contamination. This is because contamination can occur throughout the internal components of the machines that cannot be adequately disinfected without a full dismantle.



Complex equipment often has areas that are not accessible when dismantling and can cause cross-contamination. Check the manufacturer's instructions and check with your local authority.

In the case of **vacuum packers**, a full dismantle should only be undertaken by a competent engineer as the internal components need to be accessible, cleaned and disinfected.

[Separate guides](#) about '**vacuum packing**' and '**how to re-commission vacuum packers**' are available.

In the case of slicers and mincers, a full dismantle to facilitate cleaning and disinfection may be less complicated than a vacuum packer, however it is considered that this process could not be done effectively during the normal operations of a working day.

Effective cleaning procedures, may be possible on an occasional basis, for example during a period when the business is not operating, ensuring sufficient time and attention can be given to properly dismantle clean and disinfect. Dismantling will depend on the type of machine used, but the food business operator must be able to easily access and disinfect all surfaces that could be contaminated.

For other types of less complex equipment, such as temperature probes, mixers and weighing scales, the food business operator needs to determine whether it is safe to dual use during the normal operations of a working day. If you are unsure check with your local authority.

This will involve:

- determining how complex the equipment is
- how the equipment is used / dual used by the business (for example continuous use versus occasional)
- the activities of the business
- the required cleaning and disinfection to minimise the risk of cross-contamination.

The level of cleaning and disinfection will be dependent on the equipment, such that simple flat surfaces will be easier to disinfect than lots of smaller moving parts. See 'Chemical disinfection' for more information.

It may therefore be possible to dual use certain types of less complex equipment if the business has the correct controls in place.

Machinery intended for use with foodstuffs is required to comply with the [European Machinery Directive 2006/42/EC](#)

Good practice

It is recommended to label or colour code complex equipment, so all staff are aware of its intended use.

If permanent areas for raw and ready to eat food preparation have been designated, then complex equipment should be located in the suitable area depending on its use.

The law

Regulation (EC) No 853/2004

Article 5

(2) The HACCP principles consist of the following:

(a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels;

(b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or reduce it to acceptable levels;

(c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identifiable hazards.

Annex II Chapter IX

(3) At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.

Cash registers

How to comply with the law

Cash registers and other non-food contact equipment (for example pens, phones, chip and pin machines, light switches, etc.) may be shared by staff handling raw and ready to eat foods.

Staff must wash their hands before handling any ready to eat foods after handling raw foods. This is the main control. See 'Personal hygiene and handling practices' for more information.

Good practice

Having separate cash registers ensuring one is kept in the raw area and one is kept in the ready to eat area.

Cash registers should be included in your cleaning schedules.

Staff should be trained how to wash their hands effectively and how often they should wash them.

[The FSA has produced a video](#) showing how to effectively wash your hands.

The law

Regulation (EC) No 852/2004

Chapter II

(2) Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant material, be easy to clean and have an adequate supply of hot and cold water.

(3) Adequate provision is to be made, where necessary, for washing food. Every sink or other such facility provided for the washing of food is to have an adequate supply of hot and/or cold potable water consistent with the requirements of Chapter VII and be kept clean and, where necessary, disinfected.

Chapter III

Requirements for movable and / or temporary premises.

(2) In particular, where necessary:

(d) Where foodstuffs are cleaned as part of the food business' operations, adequate provision is to be made for this to be undertaken hygienically;

(e) an adequate supply of hot and/or cold potable water is to be available;

Sinks

How to comply with the law

Where possible, separate sinks must be used for raw and ready to eat foods and equipment.

If separate sinks are not possible, it can be shared if the sink, including the taps and any other fittings, are cleaned and disinfected between uses.

When the sink is shared for raw and ready to eat foods, the food must not come into direct contact with the sink. A container can be used to avoid direct contact.

Disinfectants used to disinfect shared sinks are required to comply with the **BS EN 1276:2009** or **BS EN 13697:2001** or equivalent standards see 'Chemical disinfection' for more information.

Good practice

It is recommended to have separate sinks:

- one for washing equipment and utensils used **for raw foods** and / or for rinsing raw foods such as fruits and vegetables
- one for washing equipment and utensils used for **ready to eat foods** and / or for rinsing ready to eat foods such as cooked rice or pasta

It is not recommended to wash raw meat (for example poultry), due to the increased risk of splashing bacteria onto surrounding surfaces.



For more information about why you should not wash raw meat search for '**FSA don't wash chicken**'.

It is not recommended to rewash vegetables or fruit that have been supplied as ready to eat. See '**Sources of E. coli O157 in food**' for more information.

The law

Regulation (EC) No 852/2004
Annex II

Chapter X

(1) Material used for wrapping and packaging are not to be a source of contamination.

(2) Wrapping materials are to be stored in such a manner that they are not exposed to a risk of contamination.

(3) Wrapping and packaging operations are to be carried out so as to avoid contamination of the products. Where appropriate and in particular in the case of cans and glass jars, the integrity of the container's construction and its cleanliness is to be assured.

(4) Wrapping and packaging material re-used for foodstuffs is to be easy to clean and, where necessary, to disinfect.

Chapter XII

Food business operators are to ensure:

(1) That food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity.

Wrapping and packing material

How to comply with the law

Materials used to wrap and / or pack ready to eat foods must be stored in a designated area and the wrapping material must be kept free from contamination at all times.

Staff handling, wrapping and packaging materials must ensure that their clothes and hands are not vehicles for contamination when loading or removing wrapping and packaging materials.

Food businesses must ensure that food received wrapped and / or packaged from other establishments is visually checked to ensure that the integrity and condition of the packaging do not pose a risk of cross-contamination, and that the separation between raw and ready to eat foods during transport is adequate.

When unpacking or unwrapping packaged foods, ensure that packaging and wrapping materials are removed hygienically and are not a source of contamination.

Good practice

It may be possible to establish an assured standard of cleanliness of the wrapping and packaging material through contractual arrangements with the supplier. For example, auditing the packaging material supplier or requesting written confirmation detailing the hygienic procedures followed to ensure that the wrapping / packaging materials are safe to be used with ready to eat food.

Food businesses may consider having a written agreement with their suppliers about the delivery requirements.

Where necessary, raw foods should be unpacked and / or unwrapped and placed in designated containers before they are brought into the kitchen or storage area.

Cleaning and disinfection

Cleaning is the physical removal of dirt and other matter. To clean effectively you will need to use a detergent. A detergent is chemical (e.g. washing up liquid) used to remove grease, dirt and food. It is used for general cleaning.

Disinfection is the reduction of the levels of microorganisms (germs) on a surface. There are two main ways to kill *E. coli* (and other pathogens) to control cross-contamination. We recommend using heat or chemicals (disinfectant / sanitiser).

A disinfectant which is a chemical that kills bacteria. Check that surfaces are clean of grease, dirt and food before you use a disinfectant. There may be other ways to disinfect, however you should check with your local authority if these methods are acceptable as a control.

When using a chemical disinfectant, it is important to follow the manufacturer's instructions carefully. There will be specific instructions on how to use it, including the dilution rate, and the contact time. There are specific standards that chemical disinfectants must meet, more information about this can be found in 'Chemical disinfection'.

A sanitiser is a two in one product that acts as a detergent and a disinfectant. If you use a sanitiser, make sure you use it twice, in two stages. First to clean and remove grease, and then to disinfect.

When complete physical separation is not possible, cleaning and disinfection procedures are considered critical to control cross-contamination and to ensure food safety.

E. coli O157 and other harmful bacteria must be effectively removed from all surfaces and equipment before they can be used in the preparation of ready to eat foods.

If cleaning and disinfection is not performed properly, it may result in the contamination of food and subsequently a health risk for consumers.

It is essential that staff designated for carrying out cleaning and disinfection procedures are adequately supervised, instructed and / or trained to ensure the procedures are carried out effectively every time.



Make sure staff are fully trained how to clean and disinfect surfaces such as worktops and equipment. This training should be repeated where required and managers should check processes are being followed correctly.

The law

Regulation (EC) No 852/2004
Annex II

Chapter I

(1) Food premises are to be kept clean and maintained in good repair and condition.

(2) The layout, design, construction, siting and size of food premises are to:

(a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination and provide adequate working space to allow for the hygienic performance of all operations.

Chapter V

(1) All articles, fittings and equipment with which food comes into contact are to:

(a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;

(d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area.

Chapter IX

(3) At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.

Heat disinfection

How to comply with the law

Heat is the most reliable way to kill *E. coli* O157.

If the same utensils and equipment are used for both raw and ready to eat foods at separate times, they should be heat disinfected or put through an adequate dishwasher cycle between uses, ensuring that the manufacturer's instructions are followed.

Dishwashers must be cleaned, serviced regularly and functioning correctly. If the dishwasher is not working correctly it cannot be used as a control. When using a dishwasher, you must follow the manufacturer's instructions and allow the washing cycle to complete fully.

Any method of heat disinfection is acceptable if the process removes *E. coli* O157 from all surfaces. For example, a sterilising sink or a steam cleaner. Adequate time and temperature combinations may need to be considered and utensils and equipment should be visibly clean prior to any heat disinfection.

If heat disinfection or a dishwasher is not available, then equipment and utensils should not be shared and as such be specifically designated for either raw or for ready to eat foods. See '**Separation**' for more information.

Good practice

The use of dishwashers to clean utensils and food equipment is good practice if they are properly maintained, serviced routinely and the full cycle is not interrupted once it has started.

Food businesses should follow the manufacturer's instructions of use which usually include instructions on removal of food particles, correct loading (i.e. avoid overloading), pre-rinsing equipment and utensils, removal of limescale from water jets, filters and drains, appropriate use of chemicals and regular cleaning of the machine.

If chemical disinfection is used within a dishwasher, this should be discussed with the relevant chemicals' manufacturer to ensure the chemicals used are adequate.

Where heat or a dishwasher is not available it is good practice to use separate designated sinks to wash equipment and utensils.

The law

Regulation (EC) No 852/2004
Annex II

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Chemical disinfection

How to comply with the law

When the same non-food contact surfaces such as worktops, sinks, etc. are used at different times to prepare raw and ready to eat foods, they must be cleaned and disinfected between uses.

Chemical disinfectants used in these areas must comply with **BS EN 1276:2009** or **BS EN 13697:2001** standards. If you don't know if the chemicals meet the required standard you should contact the manufacturer.

Disinfection will only be effective if carried out on visibly clean surfaces that are free from grease, film or solid matter. Chemical disinfection must always be carried out as a two-stage process

Stage 1: General cleaning using a detergent.

This involves the physical removal of visible dirt and food particles from surfaces and equipment, followed by a thorough rinse to ensure the removal of all residues from the surface.

Stage 2: Disinfection.

This involves the use of a disinfectant following the manufacturer's instructions for its dilution rate and contact time. Disinfectants will not be effective if used on dirty surfaces, or if applied at the incorrect dilution or for the insufficient contact time or the incorrect temperature.

When using a sanitiser, the two-stage cleaning process as described above is still required. Therefore, apply the sanitiser (or a detergent) first for general cleaning, rinse and then apply the sanitiser again for the disinfection stage.

Manufacturer's instructions must be checked for the correct dilution factor, contact time and rinsing for disinfectants and sanitisers. This is to ensure that the work surface has been effectively cleaned and residue from the disinfectants or sanitisers doesn't contaminate the food.

Temperature probes are an effective way to check the temperature of food. It is very important to keep the probe clean, otherwise it could cross contaminate the food. After a probe has been inserted into food, clean and disinfect it. If you are using probe wipes these should contain a disinfectant (to the required standard). The probe should be wiped immediately after use, first to remove any food residue and then again with a new wipe to disinfect. Evidence has shown that agitation (moving the wipe up and down the probe firmly) is important when cleaning temperature probes.

Probe wipes can be used as a risk reduction method but not a control in the removal of *E. coli* O157. This means if the same probe is used for both raw and ready to eat food, a more effective means of decontamination should be used. For example, wiping the probe to remove excess food residue, followed by immersion in hot water above 80°C.

Staff involved in cleaning procedures must be supervised, instructed and / or trained as required, see '**Management controls and training**' for more information.

Good practice

The '**Clean as you go**' method is recommended to ensure that work areas, utensils and equipment are kept to the required levels of hygiene during the working day.

The '**Clean as you go**' method means staff keep the work area clean and tidy at all times whilst working. This may include cleaning up spills, wiping down surfaces, removing waste to bins and generally keeping the work area, tools, staff and equipment to the required levels of hygiene to produce safe food.

When choosing disinfectants for chillers / freezers you should check with the supplier if the disinfectant chosen is effective when used at low temperatures.

Chemicals should be purchased from reputable suppliers. If you don't know if the chemicals meet the required standard you should contact the manufacturer.

Whenever you work with chemicals, you should carry out a '**Control of Substances Hazardous to Health**' (COSHH) assessment. Manufacturers will usually have information about this. Controls might include 'wear gloves when using' or 'do not breathe in spray'. The Health and Safety Executive has more information about how to carry out a COSHH assessment <http://www.hse.gov.uk/coshh>.

Training on cleaning procedures should include:

- all appropriate health and safety information
- materials and equipment required
- name of products
- required dilutions
- required contact times
- the overall standard to be achieved as part of the cleaning and disinfection process

The law

Regulation (EC) No 852/2004
Annex II

Chapter I

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(2) The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination and provide adequate working space to allow for the hygienic performance of all operations.

Chapter V

(1) All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;

Chapter IX

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Standards for disinfectants and sanitisers

How to comply with the law

Any disinfectant or sanitiser used to control cross-contamination with *E. coli* O157 should at least meet the requirements of one of the following published standards at the recommended use, dilution and contact time:

- BS EN 1276:2009
- BS EN 13697:2001

These standards provide assurance that the disinfectant (or sanitiser) is capable of reducing a range of harmful bacteria, including *E. coli*, to acceptable levels if used as stated by the manufacturer.

Food business operators and staff must ensure that they are using the appropriate disinfectants. If the standard is not displayed on the product's label they need to contact the supplier or manufacturer for confirmation.

Good practice

Disinfectants should be freshly prepared according to manufacturer's instructions. If disinfectants or sanitisers are being prepared in advance or transferred into new bottles (for example to dilute concentrated products) then it is good practice to put label instructions on the bottle on how to use the chemical, for example to specify contact time, expiry date of the product, dilution rate and if it requires rinsing.

Further information on chemicals can be obtained through the **Health and Safety Executive**, www.hse.gov.uk.

Because new products come onto the market and others are discontinued or change formulation, the FSA does not hold a list of products that comply with **BS EN 1276:2009** or **BS EN 13697:2001**.

The law

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Annex II

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Chapter IX

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Cleaning materials

How to comply with the law

Food business operators must ensure that the cleaning equipment is not a source of contamination.

Cloths that have been used to clean raw food areas must not be used to clean ready to eat areas unless suitably washed between uses in such a way that ensures that *E. coli* O157 has been destroyed.

Steeping dirty cloths in bleach is not considered an effective measure to control cross-contamination with *E. coli* O157. Any organic matter, such as grease, dirt or food left on the cloths will reduce the effectiveness of the disinfectant properties in the bleach.

Cleaning materials (for example cloths, brushes, etc.) used on the floor must be separated from materials used on other surfaces such as worktops.

Cleaning of floors must be carried out in a way that does not contaminate surfaces in a clean environment (for example by splashing).

Good practice

Cleaning equipment should be in good condition and regularly cleaned and disinfected or replaced as required.

For example, a suitably high temperature can be obtained using a hot cycle in a washing machine that typically operates at 90°C.

The use of disposable, single use cloths is recommended to prevent cross-contamination.

Cleaning materials for different areas should be easily identifiable (for example colour coded) and stored separately.



Having different coloured cloths and cleaning equipment can help staff identify which areas they should be used on.

Floors can never be regarded as clean and any food or surfaces of food equipment that come into contact with any floor must be considered as potentially contaminated (food should be discarded, and containers should be cleaned and disinfected).

The law

Regulation (EC) No 852/2004

Annex II Chapter XII

Food business operators are to ensure:

(1) That food handlers are supervised and instructed and / or trained in food hygiene matters commensurate with their work activity.

Staff

How to comply with the law

Staff must not be a source of contamination. Staff need to be trained, instructed and supervised to ensure movement between raw and ready to eat areas is managed in such a way that the risk of cross-contamination is minimised.

Where physical separation is not possible and time separation is used as a control, it is essential that staff are trained to understand the risks of cross-contamination, how to clean and disinfect, noting the correct dilution rates and contact time. See 'Chemical disinfection' for more information.

The required standard and that the highest levels of training and personal hygiene are to be maintained to ensure that staff are not vehicles of cross-contamination.

Good practice

Food businesses should consider having separate staff for handling raw and ready to eat foods.

Staff should be trained on the dangers of cross-contamination. This training should be repeated regularly.

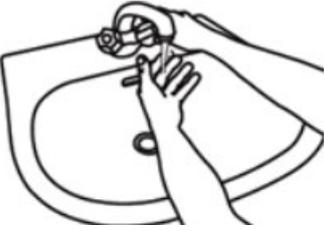
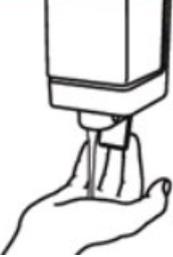
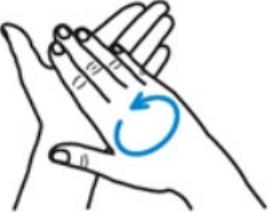
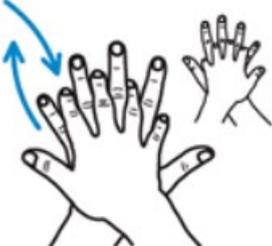
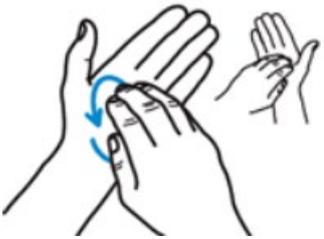
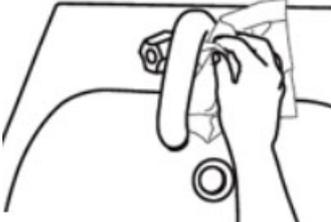
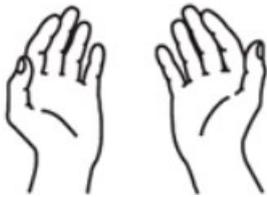


When training staff about food hygiene and cross-contamination, check their understanding either by asking questions or by a simple questionnaire.

Personal hygiene and handling practices

It is essential that staff follow good personal hygiene practices to help prevent cross-contamination of harmful bacteria to ready to eat foods.

Effective handwashing and suitable clean protective clothing can help prevent harmful bacteria spreading to food, work surfaces, equipment etc. through hand contact or clothing. An example of good washing hands technique (from [WHO](#))

		
<p>1. Wet hands</p>	<p>2. Apply enough soap to cover your whole hand</p>	<p>3. Rub palms together</p>
		
<p>4. Use the palm of one hand to clean the back of the other. Repeat for other hand.</p>	<p>5. Interlace fingers and rub.</p>	<p>6. Grip fingers and rub together.</p>
		
<p>7. Use the palm of one hand to clean the thumb of the other. Repeat for other hand.</p>	<p>8. Rub rotationally with clasped fingers. Repeat for other hand.</p>	<p>9. Rinse hands with soap.</p>
		
<p>10. Dry thoroughly with paper towel.</p>	<p>11. Use towel to turn off tap.</p>	<p>12. Your hands are now clean!</p>

The law

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Annex II

Chapter I

(4) An adequate number of washbasins is to be available, suitably located and designated for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the handwashing facility.

Chapter III

Requirements for movable and /
or temporary premises...

(2) In particular, where
necessary

(a) appropriate facilities are to
be available to maintain
adequate personal hygiene
(including facilities for the
hygienic washing and drying of
hands, hygienic sanitary
arrangements and changing
facilities)

Chapter VIII

(1) Every person working in a
food-handling area is to
maintain a high degree of
personal cleanliness...

There must be procedures in place to monitor and manage strict adherence to a documented handwashing procedure and to the appropriate use of protective clothing to control the risk of cross-contamination with *E. coli* O157.

The FSA has produced hand washing videos as well as printable diagrams on effective hand washing for use by food businesses:

Video	https://www.youtube.com/watch?v=cCpr11OuYKI
SFBB handwashing	https://www.food.gov.uk/sites/default/files/media/document/handwashing.pdf
Safe catering handwashing	https://www.food.gov.uk/sites/default/files/media/document/safe-catering%20pack.pdf

How to comply with law

Washbasins must be located to prevent contamination of ready to eat foods by splashing, and have an adequate supply of hot and cold, or appropriately mixed, running water, cleaning materials and hygienic means of drying hands.

Taps can be a source of contamination, and therefore it may not be appropriate for hands to come into contact with taps after they have been washed. For example, a disposable paper towel can be used to turn the taps off.

To control cross-contamination, handwashing is required:

- prior to handling ready to eat food
- after touching raw food and its packaging, including unwashed fruit and vegetables
- after a break
- after going to the toilet
- after cleaning
- after removing waste
- after blowing your nose

Measures must be taken before touching phones, light switches, door / fridge / freezer handles and cash registers to ensure these are kept clean.

Although there may be slight variations on handwashing techniques they all include the following steps:

- wetting of hands prior to applying soap
- a prescribed technique for hand rubbing, aimed at physically removing contamination from all parts of the hands
- rinsing of hands
- hygienic drying

It is important that staff dry their hands thoroughly as bacteria can spread more easily if hands are wet or damp.

Hand sanitising gels do not remove visible dirt and are not to be used as a replacement for handwashing.

Good practice

It is good practice to use non-hand operated taps (such as sensor, elbow or foot operated taps) at handwashing facilities as they reduce the risk of cross-contamination.

Single use, disposable towels are recommended for hygienically drying hands. Reusable towels are not recommended.

For extra protection against harmful bacteria and contamination, it is recommended to use an anti-bacterial hand wash that has disinfectant properties conforming to the **BS EN 1499** standards. This information should be available on the label of the product or may be obtained from the supplier / manufacturer.



Hand sanitising gels can provide an additional level of protection when applied after handwashing. Gels, if used, should conform to **BS EN 1500:2013** standards. These gels do not remove visible dirt and are not to be used as a replacement for handwashing.

Where possible, working practices should minimise the requirement of frequent handwashing, for example by preparing raw foods at different times to ready to eat food or by having separate staff for different dedicated activities (so one handling raw foods and one handling ready to eat foods).

Minimising direct hand contact with food by using clean tongs or other utensils may help reduce cross-contamination risks.

Even with these procedures effective handwashing needs to be followed to help further reduce any risks, for example the risk of cross-contamination with utensil handles.



Displaying posters describing the correct hand washing technique and the personal hygiene rules will help staff and visitors remember the correct procedure.

Gloves are not a substitute for effective handwashing. If gloves are used, they should be changed as often as you should wash hands as described above. Gloves should also be changed if they become damaged or torn. Hands should also be washed prior to putting gloves on and when necessary after taking them off (for example it may not be required when only ready to eat food is handled).

The use of separate identifiable or colour coded packs of disposable gloves for different activities might assist with avoiding cross-contamination.

Businesses should have a system in place to ensure that any visitor entering the premises follows the established hygiene controls.

The law

Regulation (EC) No 852/2004
Annex II

Chapter VIII

2) No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator.

Staff illness

How to comply with the law

There are three main types of staff illnesses that could cause contamination of food at work, bacteria, virus and other organisms such as parasitic worms.

People who work around open food while suffering from certain infections can contaminate the food or surfaces the food may come into contact with. This can spread infection to other people through the food. Diarrhoea and / or vomiting are the main symptoms of illnesses that can be transmitted through food.

Staff handling food or working in a food handling area must report these symptoms to management immediately.

Managers must exclude staff with these symptoms from working with or around open food, normally for 48 hours from when symptoms stop naturally.

The legal requirement also extends to managing the risk from contamination by other infected workers and visitors to rooms and areas where open food is stored or handled, e.g. managers, maintenance contractors, inspectors etc.

There are other legal requirements that are out of scope of this guidance but can be found in the FSA's [fitness to work guidance](#).

Good practice

It is best to assume that the cause of any symptoms like those described above pose a contamination risk. The food handler should be excluded from food preparation areas until evidence to the contrary is received.

Excluding infected food handlers from the entire premises is also an option, as this will remove the potential risk of contamination of food via other staff who may use the same facilities, e.g. toilets or canteens, as the infected person



Managers and staff should regularly receive training about the dangers of staff working with a reportable illness. Managers should know when to exclude someone from work if they have an infection which can contaminate food directly or indirectly.

Pre-employment checks on the health of food handlers and other workers in food businesses are not required by law, but they have been common in the food industry for many years. Such checks are usually in the form of questionnaires and requirements to obtain medical clearance certificates before working. These can provide a useful snapshot of someone's health at a point in time and reveal information about their past which could be relevant. They also provide an opportunity to emphasise to food handlers the importance of personal health and hygiene to the safety of food. However, they cannot be relied on and don't guarantee the future health status of any individual. These checks are not required by food hygiene legislation.



Prevention is better than cure. Excluding unnecessary visitors from food handling areas and minimising the amount of direct contact with food and food contact surfaces will help to avoid the risk of spreading any infections people may have. A simple questionnaire for visitors will help identify those not permitted in food handling areas.

Food business operators and managers should have an open and trusting relationship with staff. This is so they are comfortable in reporting illnesses that require them to be excluded from food preparation areas. Penalising staff for being ill, for example by not paying them when they are excluded from work, could lead to them not reporting illness and working whilst ill. Incentives to have few sick days can have a similar effect

The law

Regulation (EC) No 852/2004
Annex II

Chapter VIII

(1) Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.

Protective clothing

How to comply with the law

Staff working with ready to eat foods must always wear suitable clean clothing that does not present a risk of indirect cross-contamination. There is no specific recommended temperature at which uniforms are to be washed.

Protective clothing (such as aprons) must not present a cross-contamination risk. If contaminated it needs to be changed prior to handling ready to eat foods.

Staff members must wash their hands after changing contaminated clothing and before putting on clean clothing.

When the same staff handle raw and ready to eat food alternately (for example during cooking) there is no need to change protective clothing for different activities, but care must be taken to ensure that clothing does not become contaminated or pose a risk of cross-contamination. If clothing does become contaminated it will need to be changed.

Good practice

Staff should have clean, well maintained clothing that is washed before every shift.



Providing staff with an ample supply of uniforms that are changed regularly will help staff ensure they are always able to start working in clean, well maintained clothing. This will reduce the risk of indirect contamination.

Food businesses are to have separate sets of clothing for handling raw and ready to eat foods (and ideally separate staff) where this is appropriate and practical.

Food businesses may consider using designated colour coded aprons or disposable aprons for different activities.

Management controls and training

Effective food safety management controls are critical to control cross-contamination with *E. coli* O157.

Food hygiene legislation requires food business operators to put in place food safety management procedures based on the **HACCP** (Hazard Analysis and Critical Control Point) principles.

HACCP is a system that helps food business operators look at how they handle food and introduces procedures to make sure the food produced is safe to eat.

It is not the intention of this guidance to explain those requirements in full, however, some of these requirements are dealt with in this section. For more information about **HACCP** see the **FSA's HACCP** page: <https://www.food.gov.uk/business-industry/food-hygiene/haccp>



Safer food, better business is a food safety management pack that can help restaurants, cafés, takeaways and other small catering businesses comply with food hygiene regulations.

'Search online for **'FSA SFBB'**

Food business operators must ensure that food handlers are trained, instructed and supervised fully to understand the importance of food hygiene matters. This training should be relevant and proportional to the work they do.

Training and instruction should cover the importance of:

- separation of raw and ready to eat foods
- personal hygiene
- effective hand washing techniques
- the hazards associated with inadequate cleaning and disinfection

All staff involved in cleaning procedures need to be trained to ensure they are competent before being asked to undertake heat or chemical disinfection see '**Heat disinfection**' and '**Chemical disinfection**' sections for more information.

The law

Regulation (EC) No 852/2004
Annex II

Chapter XII

Food business operators are to ensure:

(1) that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity;

(2) that those responsible for the development and maintenance of the procedures referred to in article 5 (1) of this regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles.

Training

How to comply with the law

Staff must be instructed or trained in all safe methods that are relevant to the job they do.

The competency of staff must be supervised and reviewed routinely, so that the need for training can be identified and retraining can take place.

Staff responsible for the development and maintenance of the **HACCP** plan must receive specific training in **HACCP**.

Training records must be kept for an appropriate period see 'Record keeping' for more information.

Good practice

There is no legal requirement to attend a formal training course, however food businesses may consider using recognised training courses specific to the requirements of your particular business.

Training staff on a regular schedule will help reduce cross-contamination risks and potential food incidents. For example, refresher training for staff annually about cross-contamination and personal hygiene. Another example would be to use the four-weekly review diary found in the Safer food better business caterers pack to aid yourself and your staff, maintain safe standards as well as identify any problems that could require retraining.

The necessary skills can also be obtained through other methods such as on the job training, self-study or relevant prior experience.

The law

Regulation (EC) No 852/2004
Article 5

(1) Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.

(2) The HACCP principles referred to in paragraph 1 consist of the following:

(a) identifying any hazard that must be prevented, eliminated or reduced to acceptable levels;

(b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels;

(c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards;

(d) establishing and implementing effective monitoring procedures at critical control points;

(g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f).

(4) Food business operators shall:

(a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business;

(b) ensure that any documents describing the procedures developed in accordance with this Article are up-to-date at all times;

(c) retain any other documents and records for an appropriate period.

Documentation

How to comply with the law

Food businesses must keep up to date documented procedures that cover cross-contamination control. This must also be part of the relevant staff training.

Food business operators must document:

- any potential sources of *E. coli* O157 in the business
- method of separation (for example permanent separate areas)
- cleaning procedures for surfaces, equipment and utensils
- detail the type of disinfection required for each area / equipment (i.e. heat disinfection, chemical disinfection, etc.)
- personal hygiene procedures (for example hand washing requirements, personal hygiene rules and use of protective clothing)
- staff training

Whenever you change a process you must update the records to reflect the change. For example, if you change from a heat disinfection process to chemical disinfection. New records should be created when you start a new process for example you start a new cooking method a new **HACCP** plan for that process may be appropriate.

Records must be kept for an appropriate period see '**Record keeping**' for more information.

Good practice

Food businesses should have a food safety management system that is appropriate to the size and complexity of the business.

Management records should be kept in an organised and logical way, so you can find the right record easily when needed.

Managers and supervisors should be trained how to complete records and how to ensure that processes are followed correctly.

The following documents can help food business operators to implement and maintain a good food management system:

- [Safer Food Better Business \(SFBB\)](#)
- [Safe Catering \(Northern Ireland\)](#)

The law

Regulation (EC) No 852/2004
Article 5

(4) Food business operators shall:

(a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business;

(b) ensure that any documents describing the procedures developed in accordance with this Article are up-to-date at all times;

(c) retain any other documents and records for an appropriate period.

Record keeping

How to comply with the law

Food businesses must keep records that cover cross-contamination control. Businesses must be able to demonstrate that procedures are being followed correctly.

Records must be kept for an appropriate time. This must be long enough to ensure information is available in case a product needs to be traced back. Depending on the activities of the business these may include records of:

- monitoring and verification activities
- when something has gone wrong and what action you took to correct it
- cleaning, maintenance and pest control
- review of the food safety management system

The food safety system must be reviewed whenever substantial changes are made. For example, when introducing a new product or when using a new ingredient in a recipe.

Records must be kept of training and supervision. This should include training on cross-contamination procedures.

Food businesses should have records that are sufficient for the size and complexity of the business.

Good practice

It is not necessary to set up complex systems. Simple records are often easier to understand and keep up to date.

Documents and records should be kept for an appropriate length of time. Some factors to consider are:

- the shelf life of the product
- period of staff employment (for training records)
- regularity of scheduled cleaning

For example, if the shelf life of a product is two years the records relating to that batch should be kept for at least three years.

The food management and record control system should be reviewed at least once a year.

The law

Regulation (EC) No 852/2004
Article 5

2 (e) establishing corrective actions when monitoring indicates that a critical control point is not under control;

Corrective actions

How to comply with the law

When things go wrong, such as a loss of control, food business operators must take immediate action to ensure consumers are protected.

If a ready to eat product has potentially been contaminated with *E. coli* O157 the affected operation must stop immediately. The food business operators must remove the contaminated product to a safe area and investigate the cause. Then the following may be appropriate:

- disposal of contaminated product
- re-cook potentially contaminated product for example, heat treatment with temperatures that will destroy *E. coli* O157
- withdrawal or recall of the contaminated product

If a product needs to be recalled, you must inform the local authority and the FSA. Further information is available at:

www.food.gov.uk/policy-advice/incidents/report

Food businesses must keep records when things go wrong. These records should include:

- what went wrong
- when the incident happened
- how it went wrong (the control that failed)
- what you did to correct it
- who you informed and when e.g. your local authority or the FSA
- what control has been put in place to prevent it happening again

Good practice

Food businesses should be open and honest when things go wrong. Reputational damage is usually much worse when businesses try to hide or cover up incidents.

All food businesses, irrespective of size, should be taking reasonable precautions to ensure that food is safe. The precautions small businesses take may not be as extensive as those taken by a larger business. Businesses can take the following actions:

- use trusted suppliers
- ask for help from your local authority
- regularly check processes are working

The law

Regulation (EC) No 852/2004
Article 5

2 (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs a) to e) are working effectively.

Verification and review

How to comply with the law

Food businesses must regularly review all procedures established to control cross-contamination. Reviews are also required whenever there are significant changes to processes. For example, when introducing a new product or when using a new ingredient in a recipe.

Food businesses must check and confirm that the controls in place are effective during both quiet and busy periods, and particularly when a new procedure is introduced. These are called verification checks. Any verification check that establishes a loss of control must be considered a serious risk of cross-contamination and corrective actions must be taken immediately.

Verification checks must be recorded and kept for an appropriate amount of time. See '**Documentation**' and '**Record keeping**' sections for more information.

Good practice

Food businesses should have a system in place to regularly check that their processes are working. For example, monthly checks of the cleaning of a different area at various times.

Verification checks should ideally be carried out by someone other than the person responsible for monitoring. This means if a supervisor is responsible for monitoring, a manager could carry out the verification check.

Verification checks can be done in house (by someone in the business) or by an external independent third party for example an external auditor.

Verification procedures can include:

- audits to suppliers
- validation of critical limits
- corrective actions taken
- calibration of instruments used for monitoring
- servicing of machinery
- environmental sampling

This list is not exhaustive, and you should design verification checks for your specific business. If you need help with this, you can contact your local authority.

Glossary

The following definitions are specific to this guidance

Term	Definition
Anti-bacterial hand wash	Hand sanitising products such as bactericidal (capable of killing bacteria) liquid or foam soaps.
Area designated for ready to eat foods (clean area)	<p>An area within a food business that is specifically designated for ready to eat foods.</p> <p>It must be managed in a way that ensures that harmful bacteria such as <i>E. coli</i> O157 have been effectively excluded from all surfaces and staff that will touch ready to eat foods.</p>
BS EN	British Standard, European Norm. Disinfectants that comply with BS EN 1276 and / or BS EN 13697 published standards or equivalent standards have shown to kill <i>E. coli</i> O157 if applied and used correctly.
Chemical disinfectant	A chemical that reduces the levels of microorganisms. It is capable of reducing the levels of specific bacteria when applied to visibly clean surfaces at the specified dilution and for the recommended contact time. There are specific standards these should meet. See ' Chemical disinfection '.
Clean as you go	Keeping the work area clean and tidy at all times whilst working. This may include cleaning up spills, wiping down surfaces, removing waste to bins and generally keeping the work area, tools, equipment and staff to the required levels of hygiene.
Complex equipment	Items of equipment that can be very difficult to clean adequately between uses. This may be because it is hard to access all parts of the equipment or because they are made up of a number of small parts and surfaces which may not be smooth or easy to clean. For example, slicers, mincers and vacuum packing machines.
Contact time	The period of time that the disinfectant needs to be left on the surface to work effectively

Contamination	The presence or introduction of a biological, physical or chemical hazard in a food or food environment.
Cross-contamination	The spread of harmful bacteria onto food from either other food sources, such as raw meat or soiled vegetables (known as direct cross-contamination) or from surfaces, hands or equipment that have been contaminated (known as indirect cross-contamination).
Detergent	Product used for general cleaning (to dissolve grease and remove dirt). Detergents do not have disinfectant properties (i.e. if used on their own they are not able to kill bacteria such as <i>E. coli</i> O157).
Dilution rate / Dilution factor	Quantity of water to use with a concentrated chemical before it can be used. Always follow the manufacturer's instructions
Food business operator / FBO	Food business operator. Regulation (EC) No 178/2002 defines 'food business operator' as the natural or legal person(s) responsible for ensuring that the requirements of food law are met within the food business under their control
Foodborne	Microorganisms, such as bacteria which move into humans from food where they can then cause infection
HACCP	Hazard Analysis and Critical Control Points
Hand sanitising gels	Hand sanitising products, such as alcohol-based gels / bactericidal (capable of killing bacteria) hand gels and wipes.
Handling	To pick up and hold, move, or touch with the hands or with equipment such as tongs.
Hazard	A biological, chemical or physical agent in, or condition of, food with the potential to cause harm to the consumer's health.
Heat disinfection	Reducing the levels of specific bacteria using heat. For example, boiling or steaming. Disinfection can only happen after you have visibly cleaned all the surfaces. See 'Heat disinfection'

Leafy vegetables	Vegetables such as lettuce, spinach, cabbage, watercress, chicory, endive and radicchio and fresh herbs such as coriander, basil, and parsley. As these are likely to have soil on them it is important to remove all the soil and separate from ready to eat food. See 'Separation'
Monitoring	A pre-arranged programme of checks (observations or measurements) of critical and / or 'legal' limits to check whether control measures are in danger of failing and which determine the need to take corrective actions
Non-food contact surfaces	Surfaces that do not normally come in direct contact with food for example, walls or cupboards, but can potentially cause cross-contamination due to its close proximity to exposed food.
Packaging	Placing of one or more wrapped foodstuffs in a second container (and the second container itself).
Pathogens	These are microorganisms such as bacteria and viruses - that cause disease.
Protective clothing	Items that protect food from contamination from people. For example, coats, overalls, aprons, gloves, hats, hairnets and footwear
Potable water	Water meeting the minimum requirements laid down in Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption
Raw foods	In this context include raw meat and any raw food, including fruit and vegetables and any ingredient that are potential sources of <i>E. coli</i> O157 (fresh or frozen).
Ready to eat foods	Defined in Regulation (EC) No 2073/2005 means food intended by the producer or the manufacturer for direct human consumption without the need for cooking or other processing, effective to eliminate or reduce to an acceptable level micro-organisms of concern. For example, cooked meats, washed / peeled fruits, salads, pies, bread, cheese and sandwiches.

Recall	When customers are asked to return / dispose of a food product. This may be needed if there is a serious issue with the food. See https://www.food.gov.uk/business-guidance/food-incidents
Reportable illness	A disease likely to be transmitted through food, symptoms of which must be reported to the food business operator's manager immediately. Under no circumstances should those displaying these symptoms be allowed to enter the food handling area or handle any foods
Root vegetables / root crops	Vegetables such as potatoes, onions, carrots, beets, and turnips. As these are likely to have soil on them it is important to remove all the soil and separate from ready to eat food. See ' Separation '.
Sanitisers	Products that combine a disinfectant and a detergent in a single product. For effective disinfection they must be used twice: first to clean and then again to disinfect
Sterilising sink	A sink unit used for sterilising. They usually have one sink for washing and one for a sterilising rinse. The sterilising sink is heated to temperatures from between 85°C to 194°C. These temperatures will kill most bacteria and viruses.
Supervision	The process of overseeing staff performing tasks and procedures. Staff should be supervised to ensure that tasks are carried out effectively and to the required standard.
Validation checks	Before implementing HACCP, the contents of the plan must be validated. This is to make sure the plan will lead to safe food being produced. The focus is to ensure that the hazards identified are complete, correct and have suitable controls in place.
Verification	This means performing tests or checks, checking that procedures are being adhered to and reviewing the HACCP system to ensure that the food being produced is safe.
Visibly clean	Free from any visible grease or film or solid matter (food). A visibly clean surface can still be contaminated by harmful bacteria if it has not been disinfected.

Withdrawal	The process of withdrawing a product from market. This may need to happen if there is a serious issue with a food product. See https://www.food.gov.uk/business-guidance/food-incidents
Wrapping	Placing food in a wrapper or container which is in direct contact with the food. For example, foil, cling film or a bag.

Relevant legislation

EU legislation

Regulation (EC) No 852/2004 on the hygiene of foodstuffs

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02004R0852-20090420>

Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs

<https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32005R2073>

Regulation (EC) No 178/2002 requires that all food placed on the market must be safe to eat and defines requirements for traceability

<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32002R0178>

Council Directive 98/83/EC on the quality of water intended for human consumption

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998L0083>

Council Directive 2006/42/EC on machinery, and amending Directive 95/16/EC

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32006L0042>

National legislation

The Food Safety and Hygiene (England) Regulations 2013

<http://www.legislation.gov.uk/ukxi/2013/2996/made/data.pdf>

The Food Hygiene (Wales) Regulations 2006

<http://www.legislation.gov.uk/wsi/2006/31/contents/made>

The Food Hygiene Regulations (Northern Ireland) 2006

<http://www.legislation.gov.uk/nisr/2006/3/contents/made>

The Private Water Supplies (England) Regulations 2018

<http://www.legislation.gov.uk/ukxi/2018/707/contents/made>

The Private Water Supplies (Wales) Regulations 2017

<http://www.legislation.gov.uk/wsi/2017/1041/contents/made>

The Private Water Supplies (Northern Ireland) Regulations 2017

<http://www.legislation.gov.uk/nisr/2017/211/contents/made>

General guidance

FSA, Safer food, better business

<https://www.food.gov.uk/business-guidance/safer-food-better-business>

FSA, Safe catering (Northern Ireland)

<https://www.food.gov.uk/business-guidance/safe-catering>

FSA, Staff training guidance

<https://www.food.gov.uk/business-guidance/hygiene-requirements-for-your-business>

World Health Organisation, Good washing hands technique

http://www.who.int/gpsc/clean_hands_protection/en/

FSA HACCP

<https://www.food.gov.uk/business-guidance/hazard-analysis-and-critical-control-point-haccp>

Guidance Notes for food business operators on food incidents

<https://www.food.gov.uk/business-guidance/food-incidents>

Health and Safety Executive, Control of substances hazardous to health catering specific

<http://www.hse.gov.uk/coshh/industry/catering.htm>

Health and Safety Executive, Storing chemical products (small scale)

<http://coshh-tool.hse.gov.uk/assets/live/SR24.pdf>

Health and Safety Executive, Diluting chemical concentrates

<http://coshh-tool.hse.gov.uk/assets/live/SR02.pdf>

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