



Food Hygiene, Health and Safety

May2010

Chartered Institute of Environmental Health - CIEH



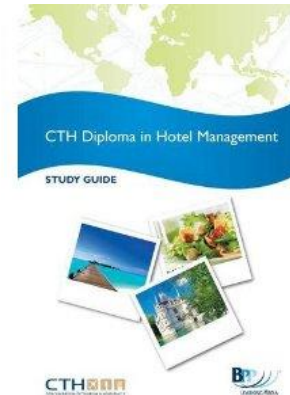
Students who are taking the FHHS exam can also take an additional 1 hour multiple choice assessment to qualify for the CIEH:

- Level 2 Awards in Food Safety certificate and
- Level 2 Award in Health and Safety in the Workplace

Students can sign up for these additional qualifications when submitting exam booking forms to CTH



Essential Reading



Confederation of Tourism and Hospitality (CTH) - Food Hygiene, Health and Safety: Study Text (Paperback)

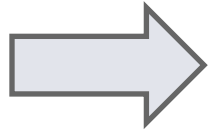
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<http://www.bpp.com/learning-materials/our-products/tourism--hospitality/cth-dip-in-hotel-management.aspx>



Content



- I. Description**
- II. Learning Outcomes**
- III. Syllabus**
- IV. Assessment**
- V. Chapters 1 - 5**



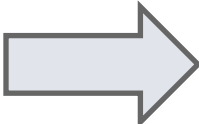
Description

Description

This module looks at the importance of hygiene, health & safety for people who work in the hospitality industry. It reviews the legislation which regulates hygiene, health & safety practices. On completion of this module students will be aware of how employers and employee are able to maintain a hygienic & safe working environment.



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Summary of Learning Outcomes

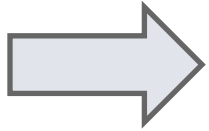
On completion of this module, students will be able to:

- Understand and explain the basic concepts of hygiene, health & safety
- Understand the legal framework for hygiene, health & safety & the enforcement & legal action on non compliance
- Demonstrate knowledge of the process to ensure a safe working environment
- Outline the risk assessment process
- Examine the fire procedures & regulations required within the hospitality industry
- Understand & apply food hygiene regulations
- Understand & explain the risk assessment process with reference to effective control measures



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Syllabus

Introduction to food hygiene, health & safety

- Costs of poor standards & benefits of good standards
- The symptoms of food poisoning & the at risk groups
- Documented food safety systems
- Common types & causes of work related accidents & ill health
- Occupational, environmental & human factors and their effect on health & safety

Legislation in hygiene, health & safety

- The scope of legislative requirements
- Outline of legal responsibilities applied to organisations
- Training, refresher training & training records
- Law enforcement
- Consequences of non-compliance

Creating a safe environment

- Health & safety policy, employer & employee responsibility
- Identifying hazards & assessing risks
- Monitoring & reviewing procedures
- RIDDOR , Reporting accidents



Syllabus

Working with Health & Safety

- Design & layout of workplace areas
- Workflow documentation
- Cleaning routines, waste disposal
- COSHH
- Manual handling, working at heights noise & vibration, care of equipment, PPE

Food safety

- Preventing cross contamination, microbiology/bacteria
- Maintaining personal hygiene
- Correct storage of foodstuffs, food safety control, temperature control
- Cleaning methods
- Food pests

Risk Assessment

- Definition of the terms risk & hazard
- The risk assessment process
- Control measures & degrees of effectiveness
- Specialised assessments



Syllabus

Fire legislation & procedures

- Fore legislation, fire hazards, fire prevention, fire fighting equipment

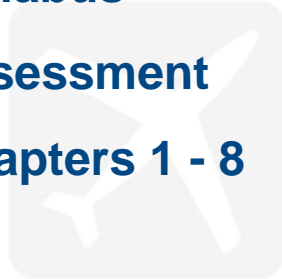
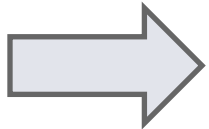
HACCP

- Definition & purpose of HACCP
- Definition of biological, chemical & physical hazards
- Critical control points
- Good working practices



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Assessment

This module will be assessed via a 2 ½ hour examination, set & marked by CTH.

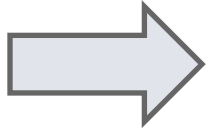
The examination will cover the whole of the assessment criteria in this unit & will take the form of 10 x 2 mark questions & 5 x 4 mark questions in section A (40 marks). Section B will comprise of 5 x 20 mark questions of which candidates must select & answer three (60 marks).

CTH is a London based awarding body & the syllabus content will in general reflect this. Any legislation & codes of practice will reflect the international nature of the industry & will not be country specific. International centres may find it advantageous to add local legislation or practice to their teaching but they should be aware that the CTH examination will not assess this local knowledge.

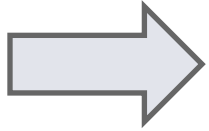


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Chapters



1. **Introduction to food safety**
2. **HACCP (Hazard Analysis Critical Control Point**
3. **Creating a safe environment**
4. **Working with health & safety**
5. **Fire safety**



Objectives

In this chapter you will learn to :-

- The importance of good hygiene & cleanliness
- The responsibility of the food handler
- Identification of hazards in the food environment
- Legal obligations
- Food safety controls



Introduction to food safety

1. Introduction to food safety
 - 1.1 Impact of poor hygiene
 - 1.2 Importance of good food hygiene
 - 1.3 Food handler's role in ensuring food safety
 - 1.4 Legal obligations & penalties
 - 1.5 Role of enforcing officers
 - 1.6 Food safety controls



Introduction to food safety

Everyone handling food has a legal responsibility to ensure food that is prepared & served to the customer is safe.

Food handlers are constantly under scrutiny following some highly-publicised food hygiene contraventions & increased awareness of food hygiene regulations.

‘Every year there are 2 million food borne illnesses in the United Kingdom (3,400 cases for 100,000 inhabitants)’

Source: Wikipedia online encyclopedia

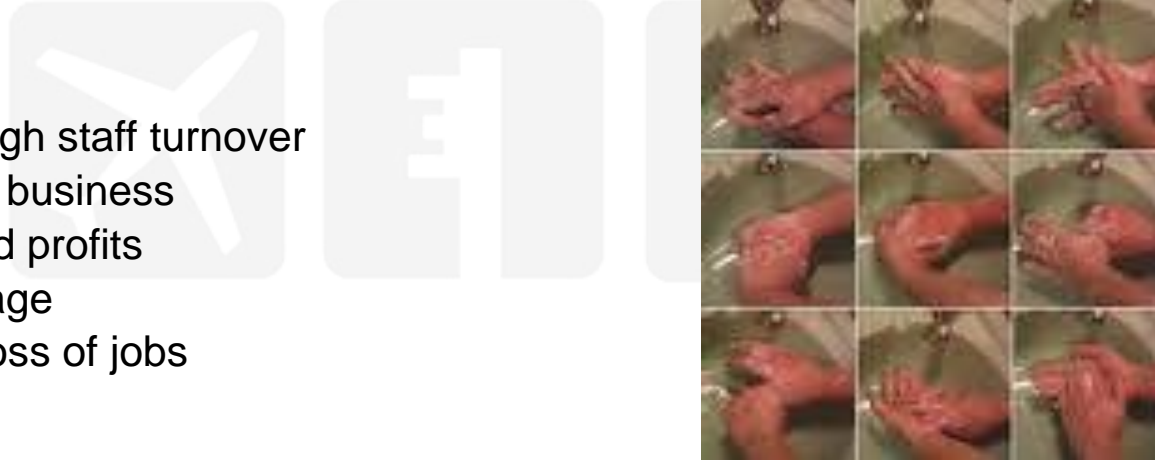


Introduction to food safety

1.1 Impact of poor hygiene

The possible effects of poor food hygiene to the business & the consumer are as follows: -

- Death
- Food-related illness
- Fines & prosecution
- Low staff morale & high staff turnover
- The reputation of the business
- Loss of sales reduced profits
- Increased food wastage
- Business closure & loss of jobs



www.picsdigger.com/keyword/food%20hygiene/



Introduction to food safety

1.2 Importance of good food hygiene

The consumer expects good hygiene standards from the kitchen, in the dining room & ancillary areas, the key benefits of these good practices are:-

- Good customer relations
- A good working environment
- Low staff turnover
- Compliant with the law
- Reduction of food wastage
- Reduced risk of food-related illness to the consumer



www.1staidfire.com



Introduction to food safety

1.3 Food handler's role in ensuring food safety

The food handler's role in the safe preparation and service of food is critical and the law states that a food handler – either as an owner of a food business or an employee – has a legal responsibility to ensure that food is kept safe.

It is important to be vigilant at all times and inform your supervisor or manager if you feel that food safety is being compromised at any time.



www.healthydistance.com



Introduction to food safety

1.4 Legal obligations & penalties

UK law states (Food Safety Act 1990) that food must be safe to eat, is not contaminated in any way and that the food is of the ‘nature, substance or quality’ described.

Food Safety Act 1990 (Amendment) regulations 2004 – www.opsi.gov.uk

Food Hygiene Regulations require that the food premises are ‘fit for purpose’ and due consideration has been given to the food preparation and ancillary areas meeting the needs of the operation.

A business is also required by law to be registered 28 days prior to commencing its business operation (England).

Food hygiene (England) (Amendment) Regulations 2006 – www.opsi.gov.uk

Non-compliance with food safety regulations can result in business or individuals being fined and imprisoned for contravention of the laws.



Introduction to food safety

1.5 Role of enforcing officers

Within the laws relating to food safety the local enforcing office has the responsibility of ensuring that the premises are legally compliantly and that the laws relating to food are enforced.

The offices may visit the premises unannounced and at ‘any reasonable time’ to carry out a routine inspection of respond to a complaint.

The primary role is to ensure food & health & safety & act upon non-compliance.

Inspection information considered to be in the public interest is available through the ‘Food hygiene Information Scheme’ & ‘Scores on the doors’” due to the Information legislation from 1st January 2005 onwards.

If the visit is of a serious nature and a complaint has been made against the premises, the enforcing officer has the right to:-

- Seize food that is deemed suspect or unfit for analysis or destruction
- Take photographic evidence
- Investigate an outbreak of food poisoning
- Issue an improvement notice



Food safety

1.5 Role of enforcing officers continued...

Within the context of the law, being able to demonstrate ‘**due diligence**’ that all reasonable care was taken would be a form of defence if you/ the company was taken to court. It is vital that records at all stages are maintained. Following documented information can be provided to support your defence:

- Documented food safety system
- Delivery/ invoices with date, time, temperature recorded
- Cleaning schedules/ deep clean programmes
- Temperature records
- Customer complaints and actions taken
- Food sampling/ analysis reports
- Enforcing officer’s report
- Training records
- Pest control contract/ records
- Food probe calibration records
- Staff medical screening records

By doing so, it is confirmed that responsibility is taken throughout the process and risks and hazards are more likely to be identified in your business. Therefore, food safety is ensured.



Food safety

1.6 Food safety controls

The law states that food safety controls are implemented within a food environment to ensure and protect the consumer from illness and harm. These controls relate to food handlers in the preparation and service of food ensuring ‘best practice’ during these processes.

A formal system which is required by law to formalise the process of identifying the potential hazards in the food chain together with control and monitoring processes is called **HACCP** (Hazard Analysis Critical Control Point).



www.stjohnwales.co.uk



Hazards

2. Hazards
 - 2.1 Physical, chemical and biological hazards
 - 2.2 Bacterial Contamination
 - 2.3 Types of bacteria
 - 2.4 Cross contamination
 - 2.5 Food allergens
 - 2.6 High-risk foods
 - 2.7 Implications of contaminated foods
 - 2.8 Food poisoning complaints and actions



www.innpacked.com



Hazards

2.1 Physical, chemical and biological hazards

At every element of the food production chain the identification of the risks needs to be evaluated to ensure that the consumer is not at risk or harm from a food-related illness or safety compromised by **contaminated food**.

	Physical	Chemical	Microbiological
Delivery/ Vehicle transportation	<ul style="list-style-type: none"> • Dust and dirt from vehicles • Shards of glass 	<ul style="list-style-type: none"> • Oil, diesel, petrol from vehicle maintenance 	<ul style="list-style-type: none"> • Contamination from raw to cooked foods • Spoilage bacteria • Pathogenic bacteria present in food
Food processing	<ul style="list-style-type: none"> • Machinery parts; screws, nuts, bolts • Metal shavings/rust • Fragments of bones 	<ul style="list-style-type: none"> • Pest bait • Cleaning chemicals 	<ul style="list-style-type: none"> • Contaminated food handler • Infected food handler- 'carrier'



Hazards

2.1 Physical, chemical and biological hazards continued...

	Physical	Chemical	Microbiological
Storage	<ul style="list-style-type: none"> • Dead insects • Packaging materials 	<ul style="list-style-type: none"> • Pest bait • Cleaning chemicals 	<ul style="list-style-type: none"> • Cross contamination, raw to cooked foods • Food spoilage bacteria • Dust • Protection from pest damage
Food preparation	<ul style="list-style-type: none"> • Finger nails, hair • Jewellery • Insects 	<ul style="list-style-type: none"> • Cleaning chemicals • Pesticides/ sprays 	<ul style="list-style-type: none"> • Viruses • Natural poisons in food
Food service	<ul style="list-style-type: none"> • Hair jewellery • Glass shards from damaged counter • sneeze screen 	<ul style="list-style-type: none"> • Cleaning chemicals • Cleaning sprays 	<ul style="list-style-type: none"> • Cross contamination, raw to cooked foods



Hazards

2.1 Physical, chemical and biological hazards continued...

It is important to ensure that food supplies are purchased from reputable and hygienic suppliers which deliver the products in clean vehicles and that chilled or frozen foods are maintained at the correct temperature during the delivery process.

Deliveries are required to be placed in storage immediately ensuring the **'first in first out'** method of stock control.

The storage areas need to be free from contamination risks, all containers should be sealed, and chemicals stored in separate areas away from the food supplies.

Any opened products that have been decanted need to have the date codes clearly identified on their storage containers to facilitate stock rotation and ensure product freshness.



Hazards

2.2 Bacterial contamination

The principle cause of food poisoning is the direct contamination of **‘high- risk foods’** with **pathogenic bacteria**, multiplication of these bacteria and then consumption of the contaminated food.

High – risk foods – These foods will support the multiplication of pathogenic given ideal conditions for bacterial proliferation. These foods are typically high in **‘protein and moisture’** and are generally **‘ready to eat’ foods** that will have no further cooking processes involved which would otherwise destroy the harmful bacteria.

Harmful bacteria may also contaminate food by means of a **‘vehicle or route of contamination’**.

Where are bacteria found?

Harmful bacteria are present in the environment:

- Soil
- Dust
- Animals, birds and pests
- Raw food
- Water – Under the Food Hygiene Regulations Act only potable water should be used in the food environment
- People – Nose, ears, throat, skin and intestines of the food handler



Hazards

2.2 Bacterial contamination continued...

To understand how food poisoning risks can be reduced it is important to understand what bacteria need to survive, how they multiply and how they can cause illness.

Micro organisms

- Bacteria
- Viruses
- Moulds or mycotoxins
- Natural poisons in plants and fish



Food borne infections

Food borne disease results from food and water that has become contaminated and which act as a vehicle of contamination for bacteria, not as a medium for growth.

Examples of food borne disease:

- Hapatitis A & B
- Dysentery
- Typhoid/ Paratyphoid
- Listeriosis
- Giardiasis



Hazards

2.3 Types of bacteria

Pathogenic bacteria are harmful bacteria responsible for food- related illness.

Beneficial bacteria are involved in fermentation processes and can also be used as a food supplement such as probiotics.

Spoilage bacteria are responsible for the decomposition of foods and these are generally noticeable in the case of rotting fruit, slime on meat, yeast proliferation in bread products etc.

Bacterial contamination

Pathogenic bacteria require right conditions to grow, multiply and survive.

Time and temperature control is very important in this process and form the two **key critical control points** during food safety controls.

Bacteria reproduce by a process called **binary fission** and they reproduce every **10 to 20 minutes**.

Bacteria need nutrients, moisture, time, neutral PH, temperature and the presence of oxygen (aerobic) to survive and multiply although, in some cases, some bacteria can survive in the absence of oxygen (anaerobic). Bacteria are destroyed by thorough cooking at high temperatures, irradiation processes and chemicals.



Hazards

2.3 Types of bacteria continued...

Bacteria

Some of the different types of bacteria, their incubation periods, sources and symptoms are detailed below:

Type	Associated with	Incubation period	Symptoms
Salmonella	Raw eggs, raw meat and poultry, carries, animals, sewage	6- 72 hours	Sickness and diarrhoea
Staphylococcus aureus (Produce toxin)	Human body – nose, mouth, skin etc	1- 6 hours	Sickness, stomach pain, low temperature
Bacillus cereus (Produce toxins & spores)	Soil, cereals, rice	1- 6 hours	Sickness, stomach pain and diarrhoea
Clotridium perfringens (Produce toxins & spores)	Faeces, soil, dust, insects and raw meat	8- 12 hours	Stomach pain and diarrhoea



Hazards

2.4 Cross contamination

Cross contamination can occur from the transference of pathogenic bacteria directly on to **high-risk foods**, these foods are generally considered to be ‘**ready to eat foods**’ that require no further cooking.

Examples of when cross contamination can occur

Delivery

- When both cooked and raw foods are transported uncovered in the same vehicle

Storage

- Raw foods stored above cooked foods which can possible drip blood and juices on to the cooked foods stored below them, thereby causing contamination

Food preparation

- Cooked and raw foods should be prepared in separate parts of the kitchen in order to avoid cross contamination
- Food contact surfaces should be disinfected after raw food has been prepared and before cooked foods are processed
- Care should be taken when dealing with raw meats and when they are washed prior to preparation that all surfaces and taps are disinfected to ensure that no harmful bacteria remain
- The food handler should ensure that hands are washed immediately after touching raw foods and before handling cooked foods



Hazards

2.5 Food allergens

An allergy is an immunological response to certain foods, food additives and colourings that can cause severe respiratory reactions and other symptoms as detailed below.

- **Oedema** of the face, tongue, eyelids lips, mouth
- **Skin rashes** (Urticaria) – itchy eyes
- **Respiratory** – Bronchitis, tightness of the chest, difficulty in breathing
- **Nausea/ vomiting, diarrhoea, stomach pain and migraine/ headache**
- **Anaphylactic shock** which if left untreated may result in death

Those individuals who are prone to severe allergic reactions may carry an EpiPen which contains a metered dose of adrenalin to treat the symptoms.

Food intolerances provide symptoms of headaches, muscle and joint pains and in some people feelings of tiredness.

The eight principal foods that make up 90% of all allergic reactions are:

- | | |
|--------------------|-----------------------|
| ● Tree nuts | ● Milk |
| ● Peanuts | ● Egg products |
| ● Shellfish | ● Soy |
| ● Fish | ● Wheat |



Hazards

2.6 High- risk foods

High- risk foods are foods which if contaminated with pathogenic bacteria and given ideal conditions for the bacteria to survive and multiply can cause food poisoning.

These foods are generally ‘ready to eat’ foods that are intended for consumption without any further treatment which would otherwise destroy the harmful bacteria through heat treatment processes.

The types of foods that are associated as high-risk foods:

- Cooked meats
- Cooked meat products which include gravies and stocks
- Cooked rice
- Shellfish/ seafoods
- Cooked eggs and products prepared with eggs as an ingredient

High-risk foods are high in protein and moisture which under ideal conditions support the multiplication of pathogenic bacteria.



Hazards

2.7 Implications of contaminated foods

Contaminated foods can cause food poisoning or pose a health and safety risk. Due care and attention is required to ensure foods are protected at all the stages of the food production chain from contamination or hazards, which may be classified as : **physical, microbiological , chemical.**

At the point of delivery or receipt of goods, food may already be contaminated by food poisoning bacteria. Care needs to be taken throughout the food production chain to ensure that the,

- risks are reduced
- multiplication of bacteria is controlled
- survival of pathogenic bacteria is minimised through appropriate storage and temperature controls, by cooking and treatment processes

In addition, the below given forms of heat treatment process provide prolonged shelf life for certain food products, together with destruction of harmful bacteria.

- **Pasteurisation**
- **Sterilisation**
- **UHT treatments**



Hazards

2.8 Food poisoning complaints and actions

If a food poisoning complaint is made against the food business, steps need to be taken to investigate the complaint to ascertain the origin and if it related to an item that has been prepared and served by your business.

Quite often anyone with a food poisoning complaint may blame the last meal they ate. However, incubation periods vary dependant on the bacteria, and the person infected may not necessarily have contacted a food illness through eating at your outlet. So, it is important to ascertain some key details such as :

- Name, address and contact details of the person affected
- Date and time of the meal that is being implicated
- Date and timings of onset of first and main symptoms and details of symptoms
- Date and time of recovery
- Medical details
- Details such as place of earlier food consumption over the previous 2 days
- Has anyone shown any signs of illness after eating the same food including family members
- Has a family member been unwell?
- Has any family member or friend returned from any overseas trip recently?



Hazards

2.8 Food poisoning complaints and actions continued ...

Food samples may be retained and sent away for analysis and if reported to the doctor the local enforcing officer may visit the premises to conduct an investigation.

The manager of the food business needs to take steps to identify that the correct processes were followed throughout the food production chain, that all staff were operating hygienically and that any infected food did not come into contact with the food.



www.offtoworktraining.co.uk



Role of the food handler

3. Role of the food handler
 - 3.1 Importance of good hygiene practices
 - 3.2 Food handling responsibilities
 - 3.3 Reporting of illnesses
 - 3.4 Importance of washing hands
 - 3.5 Protective work wear



www.highfield.co.uk



Role of the food handler

The role of the food handler is crucial to food safety and effective personal hygiene must be ensured at all times when working in the food environment.

The food business is a serious business and too often situations of deliberate food contamination and a casual or informal approach to food hygiene is taken with often dangerous consequences. TV programmes and documentaries often feature examples of poor food hygiene practices and dirty food premises.



www.article-niche.com



Role of the food handler

3.1 Importance of good hygiene practices

Many cases of food-related illnesses arise as a result of poor personal hygiene and practices. It is essential that the food handler observe the highest standards of hygiene throughout the food chain. Pathogenic bacteria can be present in the intestine and on the skin.

It is estimated that 40% of adults carry *Staphylococcus aureus* in the nose and mouth and 15% of adults on their skin.

By not washing hands after visiting the toilet or touching infected wounds and then touching high risk foods, there is a very serious risk of pathogenic bacterial contamination.



Role of the food handler

3.2 Food handling responsibilities

Prior to commencing work the food handler ,must ensure effective personal hygiene and that food environment is ‘fit for purpose’ before handling food. He must wash his hands prior to preparing and serving food.

During food preparation a food handler needs to:

- Be vigilant to ensure that foods are not in danger of contamination at any stage of the food production and service
- Report evidence of contamination or unfit food to the manager or supervisor and the items must then be immediately removed from the food environment
- Keep raw and cooked food separate to avoid ‘cross contamination’.
- Ensure that food is not stored on the floor and has not been damaged by pests
- Be vigilant when presenting food for sale that there is suitable screening to prevent food from becoming contaminated



Role of the food handler

3.3 Reporting of illnesses

A food handler has legal responsibility to ensure food safety and they must be in good general health. They have a duty to report any **food borne illness**, and symptoms of **sickness and diarrhoea**. The manager or supervisor of a business must ensure that they are taken off food handling duties immediately they become aware of this situation.

A food handler should not return to work until the symptoms have been absent for 48 hours or, in more serious cases, until confirmation has been obtained from the doctor. This may be required following medical treatment and faecal sampling in the case of a food poisoning outbreak.



Role of the food handler

3.4 Importance of washing hands

Hand washing is critical to food safety because of the risk of contamination from infected food handlers/ careers. And it should be carried out regularly, but particularly:

- After visiting the toilet
- Before preparing and serving food
- During food preparation and especially after handling raw foods
- After using chemicals
- After handling deliveries/ packages
- After handling waste
- After touching your nose, ears, hair, mouth or changing a dressing/ plaster
- After handling dirty glasses, crockery or cutlery

A dedicated wash hand basin must be available in the food preparation and services area that provides **hot (35°C – 45°C) and cold running water, bactericidal soap, and drying facilities.**

The basin should not be used for anything other purpose such as washing or soaking food nor as a general purpose sink.



Role of the food handler

3.5 Protective work wear

All food handlers should wear clean and light coloured protective, dedicated work wear when preparing and serving food. Outdoor clothing must not be worn in the food environment as they may be contaminated with pathogenic bacteria from external areas such as dust and pet hairs. Other points to note and observe:

- Hair of the food handler must be clean and tied back away from the face.
- Jewellery should not be worn in the food environment as it can potentially contaminate food.
- Strong smelling perfumes/aftershave and deodorants may taint food.
- Food should not be eaten in food preparation and serviced areas because of the 'hand to mouth' contact and the possible risk of contamination.
- Smoking is definitely not permitted in the food preparation and service areas because of the risk of 'hand mouth' and cigarette butt/ash contamination.
- Wounds, cuts, grazes and spots should be covered with a blue waterproof plaster to protect the food from being contaminated from pathogenic bacteria.



Temperature control

- 4 Temperature control
 - 4.1 Importance of temperature control
 - 4.2 Core temperatures, reheating and defrosting food
 - 4.3 Cooling food and blast chillers
 - 4.4 The danger zone
 - 4.5 food probes and calibration



www.virtualvillage.com



Temperature control

4.1 Importance of temperature control

Temperature control is critical to food safety. Harmful bacteria require the ideal medium to grow and multiply. To ensure food is safe it needs to be stored at the right temperature to prevent bacterial multiplication, and it needs to be thoroughly cooked to destroy them.

In order to ensure that bacteria are not given the conditions to support growth and multiplication, perishable food needs to be stored upon delivery in chilled or frozen storage. Non-perishable items such as tins, packets of biscuits, flour, sugar and pasta or cereals to be stored in the dry goods storage area.

Bacteria need time, temperature, moisture, nutrients and a neutral pH (degree of acidity) to grow and multiply.



Temperature control

4.1 Importance of temperature control continued...

By controlling the environment and observing strict temperature control opportunity for bacteria to grow and multiply will be reduced, as at controlled chilled temperatures the bacteria remain dormant. Pathogens and spores may still be present and care will still need to be taken when the food is removed from these temperatures because when given the ideal conditions the multiplication process will begin.

Key temperatures to remember:

Ideal chilled food storage	1°C to 5°C (the legal upper limit for refrigeration chilled storage is 8°C)
Food served hot for service	63°C
Frozen storage	-18°C



Temperature control

4.2 Core temperatures, reheating and defrosting food

Through cooking processes at high temperatures destroy most pathogenic bacteria. Therefore, it is important to make sure that the right temperatures are achieved during cooking processes.

Above 63°C bacteria start to die but it is important to reach core temperatures of at least 75°C to ensure the bacteria's destruction.

Food that are prepared and have been chilled for use at a different service time must have had core temperatures of 70°C achieved for at least 2 minutes. Generally, dishes that of a casserole nature tend to support the heat process and achieve higher temperatures more efficiently because of the moisture content, without compromising on quality.

Foods without a sauce medium are better served fresh and 'to order' as reheating at high temperatures can compromise quality. Ideally, it is best practice to serve food fresh whenever practically possible thus ensuring the effective detection of harmful bacteria and achieving a quality product.

Food that require *defrosting* must be thawed under chilled conditions and not at ambient temperatures so that when the product thaws no part can reach a temperature that will support harmful bacteria.



Temperature control

4.2 Core temperatures, reheating and defrosting food continued...

Ambient temperatures in some kitchens during the peak summer months can be very hot and thus at temperatures that support rapid bacterial multiplication.

It is important to defrost raw meat in the bottom of the refrigerator so when it thaws it does not come into contact with other foods and risk contamination. Ensure the food is placed on a tray and is covered, and, of course, food has been allowed to thaw must not be refrozen.

Do not take short cuts and attempt to defrost food in the oven or in hot water as the food will reach temperatures that will support the multiplication of pathogenic bacteria.

Ambient	Room temperature
Chilling	Achieve temperatures of 1°C to 5°C within 1 to 1.5 hours of cooking
Core cooking temperature	Achieve a core temperature of 75°C to destroy harmful bacteria
Defrosting	Thaw foods at chilled temperature storage 1°C - 5°C
Reheating	Achieve temperatures of 70°C for at least 2 minutes



Temperature control

4.3 Cooling food and blast chillers

Foods that are intended for consumption at a larger stage need to be chilled rapidly to ensure that any bacteria that may have survived the cooking process does not compromise food safety.

Once cooked the foods need to be chilled down to the 1°C to 5°C range within 1 to 5 hours. This may be achieved using a '**blast chiller unit**' which is used for the rapid reduction in core temperature in preparation for chilled storage. Where a blast chiller is not available ensure the food is placed in the coolest part of the kitchen and is decanted into several containers to assist in the cooling process prior to refrigeration.



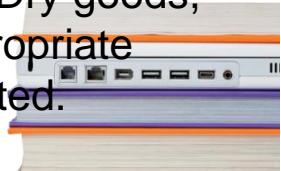
Temperature control

4.4 The danger zone

Keeping food out of 'the danger zone' (5°C - 63°C) is critical to food safety.

Temperature level	Function of bacteria
5°C - 63°C	start to multiply
37°C (body temperature)	grow rapidly
-18°C	remain dormant
Up to 5°C	growth slow or inactive
Above 63°C	<ul style="list-style-type: none"> • growth slows • Food that is served hot should be maintained at this temperature
Above 70°C	are generally destroyed

It must be ensured that food is stored at the correct temperature to minimise bacterial growth and multiplication. Chilled and frozen foods should be placed immediately upon delivery into storage and not allowed to stand in the delivery bay or in the back corridor of a warm kitchen which exposes the food not only to contamination risks but also to temperature fluctuations. Dry goods, fruit and vegetables also need to be stored away immediately and in appropriate storage areas, which should be dry, clean and well ventilated.



Temperature control

4.5 Food probes and calibration

Food probes should be in use in all food production kitchens to support temperature checks not only upon delivery and during the food production process but to check chilled and frozen storage controls. Temperature is critical to food safety and forms a **'critical control point'** under the food safety controls.

Food probes must be operational at all times and a secondary probe should be available if the main probe becomes unusable for any reason. Without a probe you are not in a position to demonstrate 'due diligence' which would form a part of your defence if taken to court.

Food probes must be clean at all times and should be cleaned using directed probe wipes to prevent cross contamination. In the temporary absence of probe wipes use boiling water, disinfectant and disposable cloths.



Food storage

5 Food storage

5.1 Safe storage of chilled, frozen and dry goods

5.2 Storage principles

5.3 Food preservation

5.4 Chemical storage

5.5 date coding



www.orchd.com



Food storage

Food needs to be stored safely to prevent bacterial growth, risk from contamination and to ensure quality. Storage areas, therefore, need to be maintained, cleaned regularly and checked for any signs of pest infection which could, of course, compromise food safety.



www.swansea.gov.uk



Food storage

5.1 Safe storage of chilled, frozen and dry goods

Food that are delivered for chilled storage must be maintained at temperatures of between **1°C - 5 °C (upper legal limit 8 °C)**. They must be in strict rotation to ensure freshness of product and date guidelines.

In premises which have allowed for appropriate storage of raw and cooked products, meat and fish have separate refrigerated storage which helps to prevent unpleasant odours tainting other food products.

Checking the packaging and quality of product is imperative before storage to ensure that the product has not become contaminated during delivery, and all outer packaging should be removed to contamination risks.

Stock needs to be rotated to ensure **'first in first out'** principle is adopted. Continuous checking of date and stock rotation will ensure staff use the right product in date order ensuring quality and food safety compliance.



Food storage

5.1 Safe storage of chilled, frozen and dry goods continued...

All frozen food to be refrigerated immediately after delivery and covered to avoid **'freezer burn'**.

Frozen storage facilities need to be maintained and defrosted regularly to ensure facility runs efficiently. In the event of a power failure, it is important to keep the doors of the freezer closed so the temperature holding the units remains constant for as long as possible.

In some cases where prolonged power failure where temperatures have reached chilled storage level, the food products can be cooked and served or, in some situations, cooked and refrozen.

Dry goods are or non-perishable items need to be stored in a dry, well-ventilated environment away from direct sunlight. Goods need to be kept on racking/shelving off the floor. These units should be easily cleaned and movable to facilitate cleaning and checks for signs of pest infestation.



Food storage

5.2 Storage principles

Foods not stored properly, not rotated, out-of-date or damaged by poor storage conditions can lead to food wastage and loss of money to the business.

By ensuring foods are covered and stock checked on a regular basis (stock take and visual observation), contamination risks should be minimised. Storage contamination risks to be aware of are:

- Water drainage/consideration in dry storage areas causing moisture-related problems on food
- Pest infestation, gnawing of food, faecal matter/urine on food, dead insects
- Chipped tiles, splintered wood, flaking paint, cracked walls allowing refuge to insects
- Presence of insects in undisturbed storage areas – storage of disposable items such as serviettes, plastic glasses, foils/films, paper roll.
- Damaged light diffuse cover in storage area
- Dust – regular cleaning of the dry stores should be conducted regularly



Food storage

5.3 Food preservation

The shelf life of foods can be prolonged through preservation methods which inhibits the growth or promotes destruction of pathogenic bacteria.

Food preservation prevents bacterial multiplication and delays food spoilage. The methods that can be adopted to promote 'shelf life' are:

High temperatures

Normal cooking methods at high temperature – Thorough cooking at high temperatures destroys harmful bacteria.

Pasteurisation – a form of heat treatment that kills harmful and spoilage bacteria. After the pasteurisation of milk the product needs to be stored at chilled temperatures as spores and toxins may still be present.

Sterilisation/UHT – forms of heat treatment that destroys all harmful bacteria.



Food storage

5.3 Food preservation continued...

Low temperatures

Chilled and frozen storage to inhibit the growth and multiplication bacteria and impede bacterial spoilage.

Smoking – Form of preservation used mainly with meat and fish.

Dehydration – Removing one of the elements that bacteria need to survive (moisture) is a form of food preservation and also prolongs shelf life. The types of foods commonly associated with dehydration are packet convenience foods and dried fruits.

Chemical additives - in the form of salt (brine, pickling or curing processes), sugar (jams), acid (pickling), sulphur dioxide (wines, beers) are used in the preservation of food stuffs.

Vacuum packing - Restriction of oxygen used in meat packing.

Irradiated food - the process of irradiation destroys harmful bacteria.



Food storage

5.4 Chemical storage

To avoid contamination of food, chemicals need to be stored safely and managed effectively. Chemicals that are often used in the kitchen and ancillary areas include dishwasher detergents and rinse aid, surface sanitisers and disinfectants, degreasing agents, etc.

Separate storage of these chemicals is required in a well ventilated area or room away from direct sunlight to avoid heat fluctuations and potential combustion, or a locked cupboard. They should be stored in their original containers and maintained with tight fitting lids. The date coding of these products must be observed and product data sheets must be available in the chemical storage site. If chemicals are decanted for dilution purpose the details of the chemicals must be printed on the container/trigger spray and a sluice sink or water supply must be made available in the chemical storage area away from food preparation.

Appropriate methods of transporting chemicals to the required areas are required to avoid the risks of contamination and to protect the person from a health and safety perspective.

Control of substances hazardous to health (COSHH) training should be undertaken for all staff on handling of chemicals to make them aware of the associated hazards especially if staff are predisposed to allergies, skin reaction, asthma ,etc.



Food storage

5.4 Chemical storage continued ...

Personal protective equipment (PPE) – must be available to the staff and must be maintained properly to ensure that it is effective for self-protection. Any defects need to be reported and the item replaced. PPE includes:

- Goggles
- Rubber gauntlets/gloves
- Face mask
- Protective uniform



Chemicals can cause harm by:

- Inhalation (breathing in)- damage to lungs and absorption into blood stream causing harm to the body's internal organs.
- Ingestion (eating and drinking) – absorption into the digestive system causing injury to the body's internal organs and/or poisoning.
- Absorption (through the skin) – damage to the skin itself and absorption into blood stream causing harm to the body's internal organs and/or poisoning.



Food storage

5.4 Chemical storage continued ...

General chemical safety guidance

- Chemicals should be used according to the manufacturer's instructions
- The appropriate chemical should be used for the task required
- Chemicals should never be mixed with other chemicals
- Wear PPE
- Warning signs to be used for wet floors/cleaning in progress
- The chemical should be added to water diluting and diluted according to the instructions
- Any decanted chemical should be appropriately labelled
- Food containers should not be used for the storage or decanting of chemicals

Strict controls regarding the use of chemicals must be adopted to ensure a safe environment and to reduce the risk of chemicals contamination.



Food storage

5.5 Data coding

Data coding is presented to ensure freshness of product and the date by which the product should be eaten, to protect consumer health.

Following methods are adopted and explained for each category of food detailed below:

Used by – Displayed on perishable foods such as meat or milk, stating to the consumer the date within which food is safe to eat and followed by ‘**display unit**’ date for the purpose of retail presentation.

Storage conditions will often be displayed on the package and will recommend storage temperature.

Best before - Displayed on non-perishable food with longer shelf life (biscuits, pasta, tinned foods, etc)

Consumption of these products beyond their ‘**best before**’ date is not immediately critical to food safety but is more of a qualitative matter. However it is ‘**best practice**’ in the commercial environment to ensure food is sold or consumed before its ‘**display unit**’, ‘**use by**’ and ‘**best before**’ dates. Storage conditions are generally recommended in dry, cool and well ventilated environment.



Food storage

5.5 Data coding continued ...

Examples of storage criteria,

Vegetables - Remove from packing and store in a cool dark place (Display unit/best before)

Wash before use. Refrigerate after purchase. (Display unit/best before)

Fruit - Wash before use and keep cool (Display unit/best before)

Dried spice - Store in a cool dry place (Best before)

Eggs - Keep refrigerated after purchase. (Display unit/best before)

Butter - Keep refrigerated (Best before)



Premises

6. Premises

6.1 Design

6.2 Workflow

6.3 Construction



www.healthscanner.info



Premises

The food business environment is required to comply with the **Food hygiene Regulations Act** in respect of the premises being suitable for the purpose of the intended business.

6.1 Design

The building and ancillary areas needs to be designed to meet the demands of the operation and constructed with materials suitable for a food business.

Separate areas for different methods of food preparation are recommended to ensure that contamination risks are minimized.

A liner flow from the point of delivery to storage facilities, food preparation area, cooking range and service should be emphasised.

Should be a provision for staff changing and rest area, toilet facilities with suitable hand wash provision.

Kitchen should be designed to ensure that all suitable space is well planned and there are no **‘dead areas’** to allow for dirt accumulation and pest infestation. The whole area is organized to allow for each of cleaning with a dedicated area for waste storage and removal.



Premises

6.2 Workflow

Must ensure that the workflow is arranged to safeguard against contamination risks.

- Deliveries need to have a dedicated deliver bay/receiving area enabling the suppliers to be checked against their order. And should not be carried through the kitchen areas as this could cause a contamination risk.
- The dry stores and storage cabinets are installed near the delivery area so the deliveries are able to be placed straight into storage upon delivery and checking.
- Food preparation work area are close to the storage areas to ensure the raw food preparation is kept away from cooked food preparation.
- Food preparation for food production is close to the servery area.

The principle of workflow will reduce risk of contamination and provide for a linear workflow which is efficient for the operation and the employees.

A badly planned kitchen will have food operations crossing over different parts of the kitchen to carry out their duties, which will not only pose health and safety risk but more important a food hygiene problem.



Premises

6.3 Construction

Premises need to be constructed with the appropriate materials to suit and meet demands of a food business.

- Materials need to be durable, easily cleaned and impervious
- Smooth lines to allow for ease of cleaning
- Non-slip floor materials
- Heat resistant
- Light decoration (non-toxic materials) to highlight dirt and promote regular cleaning



Premises

6.3 Construction continued ...

Requirements on working condition:

- Suitable ventilation for the nature of the business - to provide the necessary air cycle changes per minute and to provide reasonable working conditions.
- Adequate lighting – to the effective and hygiene operation of the food business. Diffuser covers should be fitted to lights and fluorescents lighting to prevent glass contamination.
- Adequate drainage with escape to mains drains to ensure no waste or flooding to kitchen and ancillary areas.
- Suitable provision for pest control such as fly screening or mesh at the windows and doorways to the external areas, and an internal insectocutor fitted for eradication of flies that may enter the kitchen and ancillary areas.
- Movable equipment – to facilitate ease of cleaning and maintenance. Tabling and racking should be of an **impervious** nature to also allow for ease of cleaning. Unsealed wooden tabling or racking is not suitable as wood is porous and may harbour bacteria and cause contamination from wood splinters.

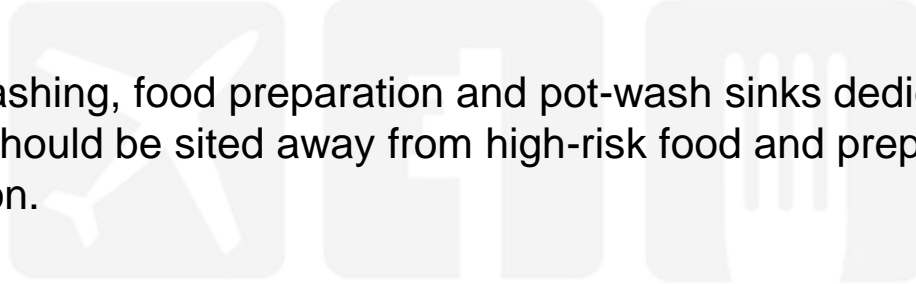


Premises

6.3 Construction continued ...

Impervious – non-porous

- Adequate storage facilities and temperature – controlled units. Fridges/freezers should not be sited near equipments such as ovens/heated cupboard/containers as this will affect their efficiency.
- provision for hand washing, food preparation and pot-wash sinks dedicated to their respective uses. Pot-wash sinks should be sited away from high-risk food and preparation areas to reduce the risk of contamination.



Food pest

7. Food pests

7.1 Common food pests

7.2 Hazards associated with pests

7.3 Pest controls



www.cardinalpestcontrol.co.uk



Food pest

The food environment should be free from pest and infestation and appropriate steps should be taken by the business to ensure the premises stay pest free.

Pest control contractor - employed to conduct pest proofing survey and visit on a regular basis to provide professional pest control. The contract provided by the pest control contractor together with a report of his visits will also form part of the **'due diligence'** defence under the **Food Hygiene Regulations Act**.

7.1 Common food pests

Pests that are most commonly associated with the food environment include:

- Birds
- Insects – flies, wasps, moths
- Beetles
- Cockroaches
- Mice/rats, etc



Food pest

7.1 Common food pests continued ...

Birds and insects can access through the opened windows and doors that have not been secured by mesh screening.

Badly maintained premises with cracked walls, unsealed holes, open areas around pipe work and ceiling to wall crevices allow access for vermin (mice/rats, insects, beetles, etc).

Damp environments (bathrooms/toilets) often attract silverfish, while a warm or dry areas such as laundry rooms and kitchens tend to attract beetles and cockroaches.

Survival of these pest dependent on the availability of **food, moisture, warmth, and quiet areas for nesting.**

Domestic animals must certainly not be allowed or encouraged to enter the food premises.



Food pest

7.2 Hazards associated with pets

Pests carry **pathogenic bacteria** on their skin, features, fur, feet, mouth, saliva and in their faeces and urine. Therefore, food should be stored in tightly fitting containers and remain covered at all times.

Vermin are destructive pests in their search for survival seeking out food and water. If they access the food environment, contamination can occur through the gnawing of food containers, food left out overnight and damage to the general fabric of the building such as wooden frames and joists.

Evidence of infestation :

- Flies and other insects
- Cockroaches
- Ants
- Beetles
- Wasps
- Birds



Food pest

7.3 Pest controls

- **Vermin(mice/rats)** – it is important that the premises are maintained to ensure that areas around pipe work are sealed, drain covers are in place, all doors/windows are tight fitting and damaged brickwork and air vents are regularly checked for any signs of access.
- **Insects** can access through open windows/doors, and the premises should be fitted with mesh screening or door curtains to reduce the risk of contamination. Additionally, an electric insect machine can be used which attracts flies to ultra violet light to eradicate those flies that have entered the premises. The tray at the base of the machine must be emptied regularly and, obviously, must not be sited near a food preparation area.
- Insecticides and fumigation methods may also be adopted in the eradication of insects.
- **Birds.** Doors/windows should be closed with mesh screening to prevent access. Gaps in roofing cavities also must be mesh proofed to deter access.



Food pest

7.3 Pest controls continued...

Key points for control of pests

- Regular cleaning
- Remove food waste at night and store in tight fitting lidded bins
- Ensure there are no dripping taps or accumulations of water or liquid
- Do not leave food out at night: do clear spillages.
- Do not store food on the floor
- Ensure food is covered at all times
- Well maintained premises with adequate proofing and mesh screening or curtain blinds at doors, kick plate at base of doors, with checks to the external areas immediately surrounding the premises for signs of 'rat runs' and nesting materials.
- Remove the requirements for survival- food, moisture, temperature and harbourage (undisturbed areas.)
- Rodenticide and pesticide control for internal and external areas.



Cleaning

8. Cleaning

8.1 Principles of cleaning

8.2 The functions of disinfectant, detergent and sanitisation



www.derwen.ac.uk



Cleaning

Regular and periodic cleaning is undertaken to prevent the risk of contamination and food-related illnesses.

Cleaning extends not only to cleanliness of the food operator but also to the premises and the environment within which the food business operates. Formal cleaning schedules will reduce the risk of contamination from microbiological, physical and chemical hazards.

A schedule includes: what has to be cleaned, how frequently, using what type of chemicals and by whom. And the schedule is signed by the operator/supervisor to confirm that the cleaning has been completed.

Cleaning schedule document will assist in supporting the 'due diligence' defense process.

Customers expect a clean and hygienic operation and can easily assess the hygiene controls by their first impression.



Cleaning

8.1 Principle of cleaning

Objective of cleaning – to ensure hygienic operations, premises, food preparations and storage areas and to comply with the law. Effective cleaning will reduce the risk of food-related illnesses and promote customer confidence.

The cleaning process will involve hot water, chemicals and physical action and processes.

- Remove debris
- Cleanse the item and rinse
- Use a chemical disinfectant and hot water achieving a temperature of **82°C**.
- Rinse following disinfection



Cleaning

8.2 The functions of disinfectant, detergent and sanitization

A **detergent** is used to remove dirt and soil and is usually followed by the disinfection process.

A **disinfectant** is used to reduce bacteria to a safe and acceptable level and is used for all food and hand contact surface and will include :

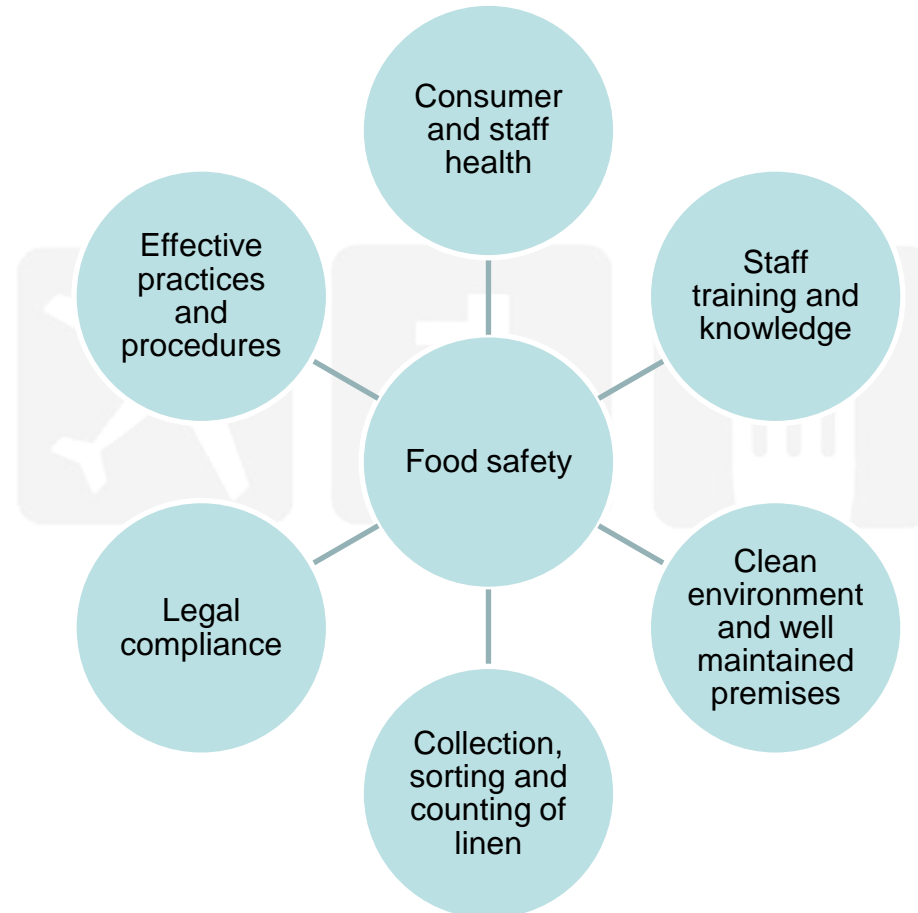
- Taps
- Food contact surfaces – tabling, machinery, utensils, boards, can openers
- Crockery/cutlery/ glassware
- Switches
- Telephone
- Temperature probe
- Handles, drawers, doors, lids (waste bins)

Sanitisation involves a combination of a detergent and disinfectant and a minimum contact time is required to make sure the process is effective.

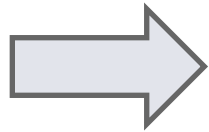
Cleaning equipments must be stored away from food production



Summary



Chapters



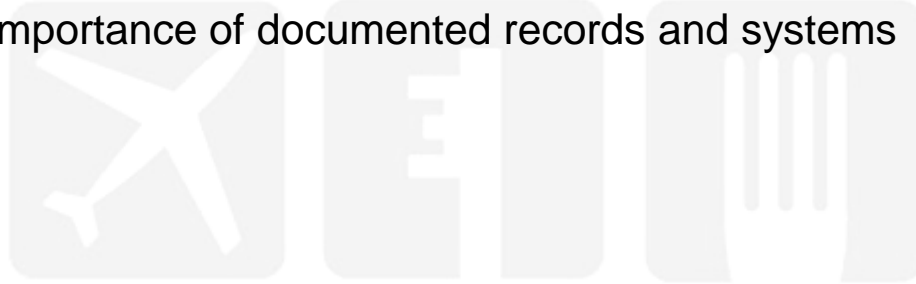
1. Introduction to food safety
2. HACCP (Hazard Analysis Critical Control Point
3. Creating a safe environment
4. Working with health & safety
5. Fire safety



Objectives

In this chapter you will learn n to -:

- Identify the hazards involved in the food chain
- Understand how these can be controlled and monitored
- Recognise the importance of documented records and systems



What is HACCP?

1. What is HACCP?

1.1 Complete food safety management system



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What is HACCP?

HACCP stands for Hazard Analysis Critical Control Point and is **a form of food risk assessment used as a food safety control.**

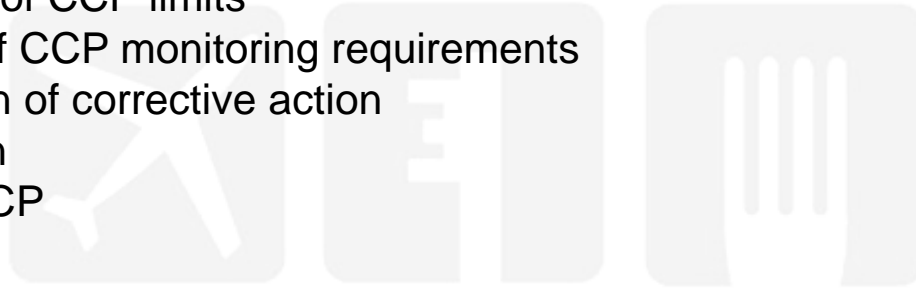
1.1 Complete food safety management system

The process identifies food and safety hazards at each stage of the food chain and the potential risks throughout from receipt/delivery of food supplies to storage, food preparation, production and service. It identifies things that could go wrong (**the hazard**) and the practices and procedures (**critical control point**) that must be put in place to prevent the hazards occurring and to prevent contamination and food poisoning.



The seven stages of the HACCP process

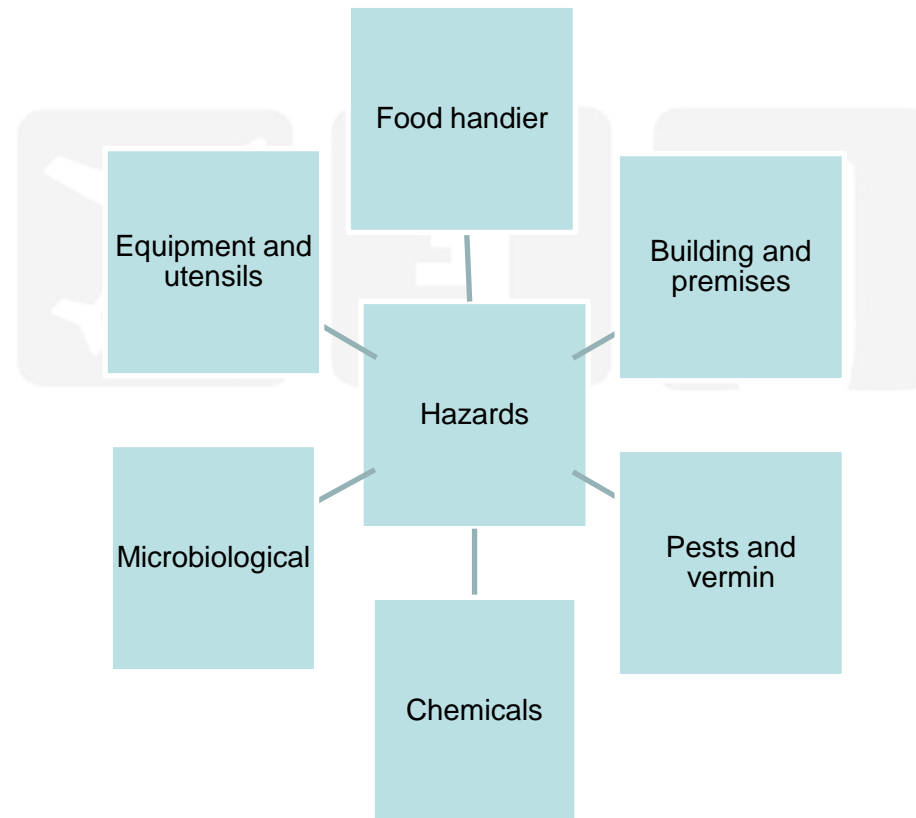
2. The seven stages of the HACCP process
 - 2.1 Identification of hazards
 - 2.2 CCP recognition
 - 2.3 Establishment of CCP limits
 - 2.4 Identification of CCP monitoring requirements
 - 2.5 Implementation of corrective action
 - 2.6 Documentation
 - 2.7 Effective HACCP



The seven stages of the HACCP process

2.1 Identification of hazards

The hazards in the food environment can be categorized as **Physical, chemical and microbiological**.



The seven stages of the HACCP process

Delivery and recipient of food suppliers

It is important to maintain copies of all delivery notes and food receipts from suppliers as this will form an element of the ' **due diligence** ' defense if action is taken to examine the food chain after an alleged

Food position incident.

Visual observation of the delivery vehicle and delivery personnel will give an education of good hygiene practices being adopted. The vehicle should be clean, and if chilled or frozen goods are being delivered it should be operating at the correct temperature. Incorrect temperature control may not promote bacterial multiplication in perishable and high-risk food

Checks to observe the general cleanliness of the vehicle to ensure it is free from debris, grease, oils

(**chemical contamination**) and dirt, loose parts, chipped or flaking paint (**physical contamination**)

are important.

The vehicle should not be used for any other purpose other than transportation of food supplies to

ensure that food safety is not compromised in any way.

The packaging of the goods needs to be carefully observed for signs of containers damaged from pest infestation. If food is not protected by packaging, there may be no guarantee to the integrity of the supplies.



The seven stages of the HACCP process

The food needs to be purchased from a reputable supplier, a supplier that has gone through its own rigorous checks and been inspected by the proprietor or manager of the food business to ensure that hygienic practices and a food safety management system have been adopted.

If, as a food proprietor or manager of a food business, you are in any doubt to the freshness and quality of the product which is not supported by appropriate packaging, temperature controls and date coding then it should not be accepted and needs to be returned to the supplier. It is not worth taking the risk.



The seven stages of the HACCP process

Food Storage

Upon receipt of the delivered food items the products need to be placed in appropriate storage. Perishable foods need to be chilled immediately to ensure that **bacterial multiplication** is minimised. Foods need to be stored at refrigerated temperatures of between **1°C and 5°C** and kept out of the '**danger zone**' (**SOC - 63°C**) especially at temperatures at **37°C** which promotes rapid bacterial growth.

Frozen foods should not be left for too long before putting in frozen storage as the products may start defrosting. The temperature control for frozen storage is **-18°C** and food must be covered to avoid freezer burn. To ensure the efficiency of the freezer units they must be defrosted regularly.

Raw and cooked foods should be stored separately to prevent the risk of cross contamination, with cooked food stored above raw foods, if separate chiller units are not available.

The '**First in, First Out**' method should be adopted to ensure foods do not go out of date and are fit for human consumption.

Care needs to be given to those foods considered as **food allergens** as these pose a risk to those people who are predisposed to allergic responses which can be life threatening.



The seven stages of the HACCP process

Food preparation/service

-Food handlers must ensure that appropriate protective work wear is worn at all times and jewellery definitely not worn in the kitchen as this can cause both **bacterial contamination** from bacterial harbourage in gem stones and physical contamination from losing jewellery in food.

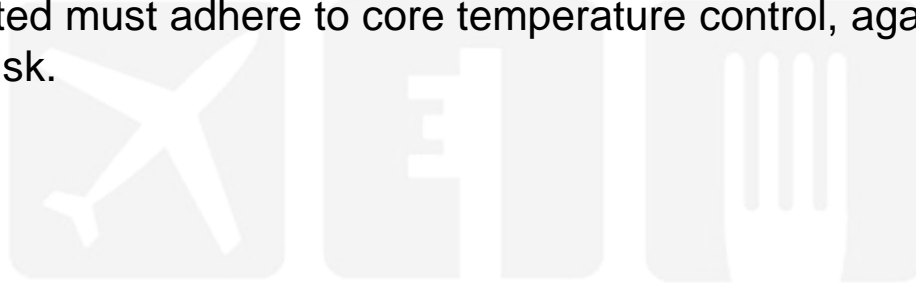
The food handler needs to be aware of the risks associated with food allergens, preparation of **raw and cooked foods** and the importance of washing hands during these processes. Old and worn utensils need to be thrown away as these could contribute to **physical contamination** hazards from loose or broken

Cleaning process should be carried out when the food preparation has ceased. However, for spillages and necessary cleaning during these processes the food should remain covered at all times to prevent **chemical contamination**. Chemicals should be stored away from food and in dedicated lockable storage to prevent contamination.



The seven stages of the HACCP process

Temperature control during food production and service to minimise/slow bacterial multiplication is critical to food safety. Food that is to be served hot must be served at temperatures above **63°C**. Food that is cooked and is not to be served straight away must be chilled within **1.5 hrs** to between **1°C-5°C** to ensure **bacterial multiplication** hazards are reduced. Foods that are subsequently reheated must adhere to core temperature control, again to control the bacterial multiplication risk.



The seven stages of the HACCP process

2.1 Identification of hazards

	Hazards
Delivery /vehicle transportation	<ul style="list-style-type: none"> ● Dust and dirt from vehicles ● Shards of glass ● Oil,diesel,from vehicle maintenance
Food processing	<ul style="list-style-type: none"> ● Machinery parts; screws, nuts, bolts ● Metal shavings/rust ● Fragments of bones



The seven stages of the HACCP process

2.1 Identification of hazards-Continued

	Hazards
Storage	<ul style="list-style-type: none"> ● Dead insects ● Packaging materials ● Rodenticide/pesticide ● Cleaning chemicals
Food preparation	<ul style="list-style-type: none"> ● Finger nails, hair, ● Jewellery ● Insects ● Damaged utensils
Food service	<ul style="list-style-type: none"> ● Hair /jewellery ● Glass shards from damaged counter sneeze screen ● Cleaning chemicals



The seven stages of the HACCP process

2.2 CCP recognition

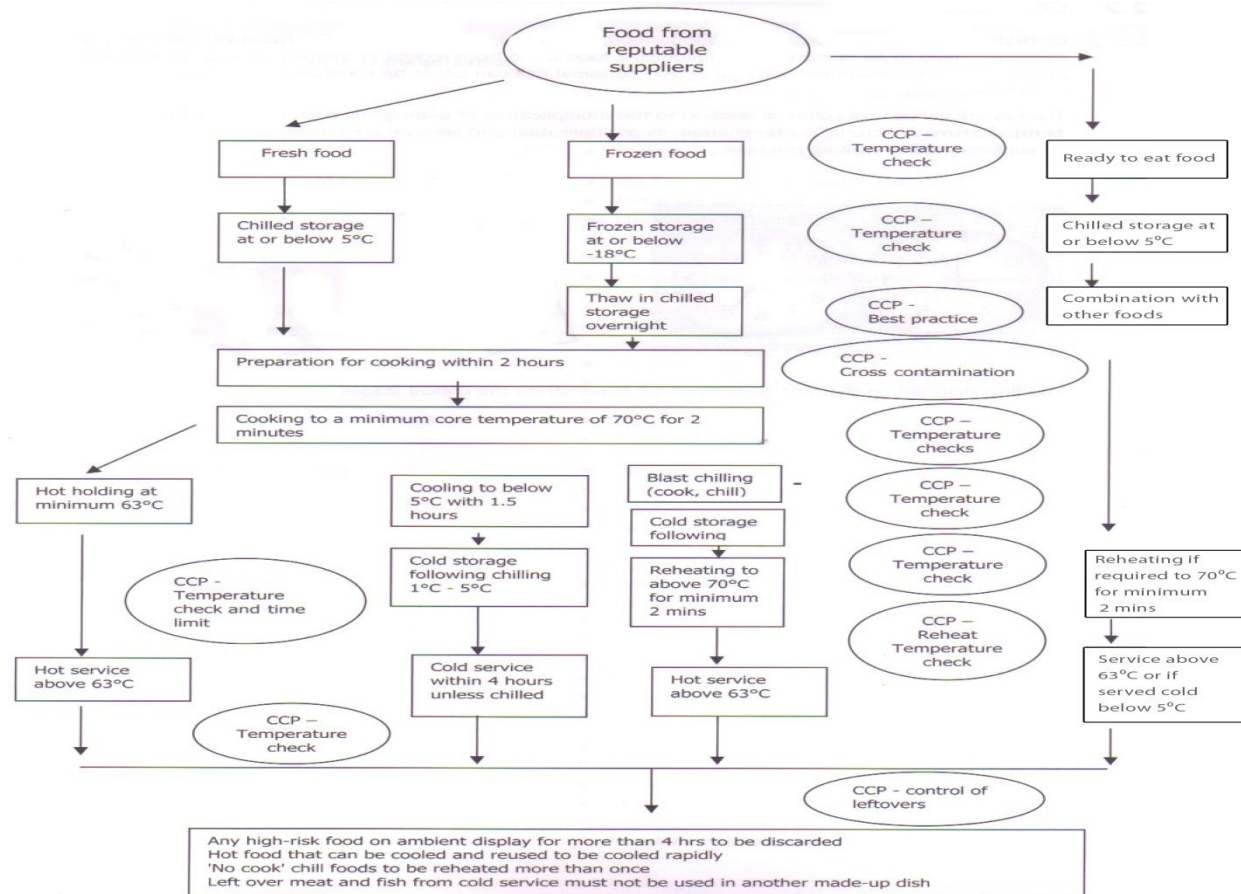
Critical control points are stages during food production that are potentially crucial to food safety .

The key critical points in relation to the multiplication of pathogenic are '**time**' and '**temperature**'. Bacterial contamination, its multiplication and survival are critical and controls need to be implemented to contain the risks.



The seven stages of the HACCP process

CCP-Critical control points, flow diagram



The seven stages of the HACCP process

2.3 Establishment of CCP limits

The limits of the each of the critical control points determine the acceptable levels to prevent a risk to food safety.

Example:

The critical limits in terms of '**high-risk foods**', those that are "**ready to eat**" foods is the control of temperatures during display. If these foods are stored at ambient levels, the **four –hour exemption rule** would apply and the product would have to be discarded after 4 hours.

Breaches of critical limits can compromise consumer health and therefore it is essential to have controls in place.



The seven stages of the HACCP process

2.4 Identification of CCP monitoring requirements

Controls should be in place to ensure that the **CCPs** are monitored at every stage of the food chain.

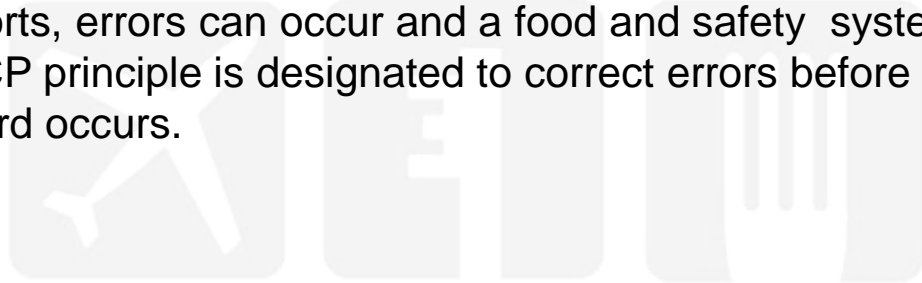
- Temperature control is crucial to the food and safety.
- Temperature s of the chilled and frozen eggs must be checked regularly.
- The probing of food during production to achieve the required **core temperatures** to destroy pathogenic bacteria is critical to food safety.
- The probes used within the food environment calibrated electronically at least once a year with the calibration report retained for inspection as part of the **food and safety controls and due diligence**.
- The monitoring of **CCPs** must be undertaken by a person responsible food safety.
- A documented evidence of **what** has to be controlled, **how** the monitoring process is undertaken, **who** the designated person is responsible, **when** and **where** the actions take place.



The seven stages of the HACCP process

2.5 Implementation of corrective action

- If a critical limit is breached, corrective action needs to be taken immediately.
- Despite efforts, errors can occur and a food and safety system based upon HACCP principle is designated to correct errors before a food safety hazard occurs.



The seven stages of the HACCP process

HCCP Plan

	Hazards	Controls and monitoring processes
Delivery/vehicle transportation	Dust and dirt from vehicles Shards of glass	Nominated/reputable s Suppliers Food covered /integrity of packaging
Food processing	Machinery parts; screws, nuts Metal shavings/rust	Visual observation for physical contamination Cleaning process separate from food production
Storage	Dead insects	Visual observation for physical contamination
Food preparation	Finger nails, hair Jewellery	Visual observation Good personal hygiene
Food service	Hair /jewellery	Food handler-effective hygiene methods



The seven stages of the HACCP process

2.6 Documentation

HACCP requires,

- Temperature records of chilled and frozen storage
- Temperature control during during reheating/cooling of foods
- Temperature records for chilled vending
- Food probe temperatures during production
- Food probe calibration reports
- Fridge/freezer thermostats monitoring



The seven stages of the HACCP process

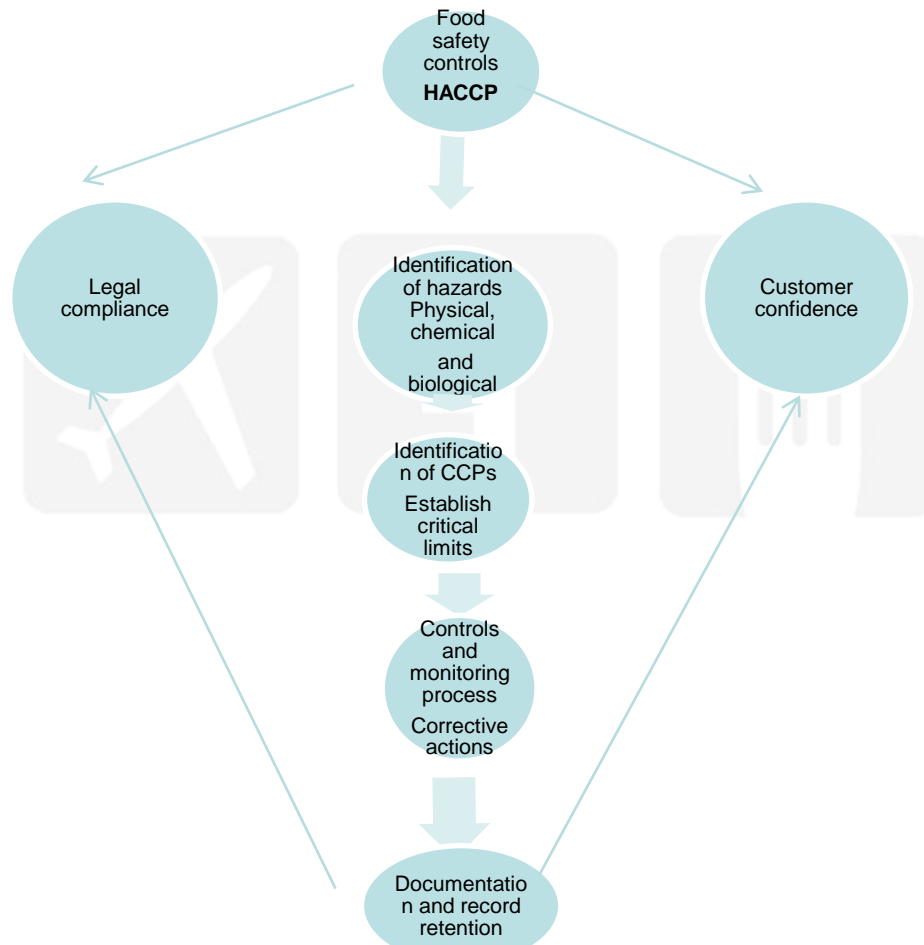
2.7 Effective HACCP

A review of the HACCP plan needs to be conducted periodically and most importantly, when there are any changes such as:

- Supplier product specification
- Change in a piece of equipment
- Change in recipe compilation
- Change in food production method
- When there is a customer complaint or food poisoning incident
- Review following an inspection by the local enforcing officer.

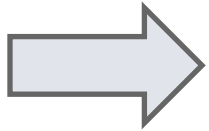


Summary



Chapters

1. Introduction to food safety
2. HACCP (Hazard Analysis Critical Control Point)
3. Creating a safe environment
4. Working with health & safety
5. Fire safety



Objectives

In this chapter you will learn to :-

- The Health and Safety legislative
- Employers responsibilities
- Safe working practices for the workplace



Health and safety at work Act 1974

1. Health and safety at work
 - 1.1 Duties of employers and employees
 - 1.2 HSE and enforcement



www.hseq-ltd.co.uk



www.esdcompany.co.uk



Health and safety at Work Act 1974

The Health and safety at Work Act was designed to protect and provide for the health and safety and general welfare of employees. Poorly maintained workplaces can lead to risks to health, safety and welfare.

There is a need to undertake risk assessments within the workplace to identify potential hazards and provide safe working practices to minimise the risk of injury or harm.

The Health Safety and Welfare Regulations 1992 set down minimum physical and welfare standards for workplaces. The regulations first came in to force in 1992 and applied to existing premises from 1 January 1996.

Workplace is defined in regulation 2(1) of the workplace regulations as “any premises or part of premises that are not domestic premises and are made available to any person as place of work, and includes:

- Any place within the premises to which such person has access while at work; and
- Any room, lobby, corridor, staircase, road or other place used as a means of access to or egress from the workplace or where facilities are provided for use in connection with the workplace, other than a public road”.



Health and safety at Work Act 1974

1.1 Duties of employers and employees

The employer is responsible for ensuring that all precautions are taken to guarantee a safe working environment.

These actions are to protect employees and all that who come to contact with the business as part of their activities, from accidents and injury. Employees too have a duty to care for themselves and others at the workplace.



Health and safety at Work Act 1974

1.2 HSE and enforcement

The Health and safety Executive (HSE) has wide ranging powers and also the authority to serve improvement and prohibition notices.

In the same way as Food Hygiene Inspectors, the HSE can access premises at given time and also possess the power to seize equipment and materials and take samples for investigation. The outcome is later reported to the manager or proprietor. The HSE officer may visit the premises upon a complaint or by means of a routine inspection. The HSE can serve either of the following depending on the severity of the incident,

An Improvement notice is served generally where there is a breach or likelihood of this occurring of one of the statutory provisions within the Health and Safety Act 1974. Similarly, with the Food Hygiene Regulations an improvement notice is served with detail of the offence and the time frame within which the matter should be remedied.

A Prohibition notice is served where there is significant risk of injury or the breach is considered to be life threatening, and the practice must cease until appropriate actions have been taken.



Employer's responsibility

2. Employer's responsibility
 - 2.1 Health and Safety notices
 - 2.2 Induction and training
 - 2.3 Employer and individual responsibility



Employer's responsibility

There are many reports recorded of incidents at the workplace which has resulted in fatalities, serious injuries and minor incidents . Many of these could have been prevented through adequate health and safety management systems in place.

The costs of poor safety management include:

- Fatalities
- Serious injuries
- Compensation claims
- Bad publicity
- Cost of sick pay
- Loss of production
- Reduced staff morale



The employer must provide a dedicated **Health and Safety Policy** with a documented **Health and Safety Management** System pertinent to their business operation. Also the business has the responsibility to have and display Employers **Liability Insurance**.



Employer's responsibility

2.1 Health and Safety notices

The employer must provide a health and safety policy relevant to the business activities. This includes having a special person responsible for the implementation of the policy and the company's compliance with Health and Safety legislation.

The policy may confirm that,

- All reasonable care is exercised in respect of health and safety, and all risks are minimised at work where its practically possible.
- Anyone entering the premises is not exposed to health and safety risks during their visit.
- Any work undertaken should not jeopardize the health of employees, customers or the general public
- A safe working environment is provided that exposes none to health dangers.
- Risk assessments are conducted to identify hazards, correct them and implement proper safety procedures.
- All equipment is well maintained.
- Safe access and egress are provided with out any risk to health.
- Proper training, instruction and supervision is provided ensuring safety of every employee and visitor.
- Those responsible for reckless behaviour and deliberate contravention of safety policies maybe subject to company disciplinary procedures.

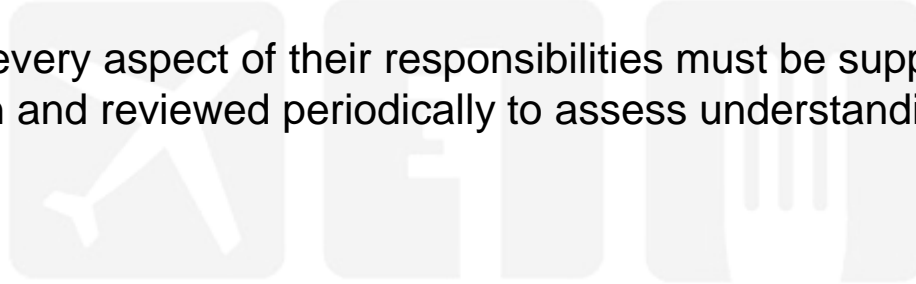


Employer's responsibility

2.2 Induction and training

All employees must be given proper instruction on health and safety matters applying to the workplace prior to their commencement of duties.

Training for each and every aspect of their responsibilities must be supported by detailed training documentation and reviewed periodically to assess understanding.



Employer's responsibility

2.3 Employer and individual responsibility

Employees to have a “**duty of care**” not only to themselves but also to others in the work environment.

Standards expected from the employee:

- They must inform their manager if they are unfit or is unwell during work.
- Inform supervisor if they don't understand to use an equipment
- Report dangerous practices and procedures
- Do not use equipment under the influence of alcohol or drugs
- Report damaged **PPE** (personal protective equipment)

Estimated numbers of new cases of occupational disease reported by specialists and occupational physicians to THOR by country, Avg 2005-2007

The average incidents of musculoskeletal disorders in:

England	4530
Wales	295
Scotland	490

Source: *The Health and Occupation Reporting network (THOR)*



Equipment safety

An employer is responsible for ensuring that equipment is fit for use. Equipment needs to be reviewed periodically to check for malfunctions that could bring about disruptions at the workplace.

Assessments need to be carried out to understand the level of risk associated with equipment and how the risk of injury or harm may be controlled or eliminated.

A system of work will need to be provided and appropriate training and supervision given to the employee to ensure that the risk of injury or harm is minimised where possible.

Safe system of work - A detailed system of working for those involved in the use of equipment to minimise injury or harm



Equipment safety

3.1 Safe work practices

Safe working practices and the successful implementation of health and safety policies and procedures need to be supported by an understanding of both environmental and occupational health related matters. Full training must be given upon engagement and employees must not undertake any duties without prior instruction.



www.steeprock.ca



Equipment safety

3.2 Main causes of accidents in the workplace and their prevention

Occupational health plays a vital part in the work place addressing and identifying the effect of the work environment or job on the individual and their work performance. The principal factors that contribute to occupational diseases and conditions can be summarised in the following terms:

Physical

Temperature

Vibration

Noise

process

Light

Dust

Space

Ventilation

Chemical

Cleaning agents

Biological

Viral hepatitis

Physical movement

The work environment

- Heat stroke or hypothermia from extremes of heat or cold
- Tingling and numbness of fingers
- Impaired hearing from working without PPE during machinery

- Impaired vision

- Conditions that can be contracted from asbestos, coal etc

- Claustrophobia

- Breathing difficulties

Chemicals that employees may come to contact with at work

- Skin conditions, Breathing difficulties

eg working with and in contact with humans

- Hepatitis B. contact with blood from syringes

- repetitive strain injury



Equipment safety

The main causes of accidents in the work place relate to:

- Stress
- Falling from heights
- Slips and trips
- Not following instructions
- Bad behavior in the work place
- The effect of being under the influence of alcohol or drugs
- Not wearing PPE (noise defenders, safety shoes)
- Being hit by an object

Accidents can be prevented by making sure that risk assessments have been undertaken and staff trained in health and safety procedures.



Employer's responsibility

3.3 Visual display units (VDU's)

An assessment needs to be carried out under the **Display Screen Equipment Regulations 1992** for those individuals that use display screens equipment for a significant part of their daily work. It will also incorporate a work station risk assessment and the company will provide the employees with periodic eye sight testing.

The main issues relate to working with **display screen equipment** are visual fatigue, RSI (Repetitive Strain Injury) and neck, back and shoulder aches and pains.



Electrical safety

4. Electrical safety
 - 4.1 Assessment of electrical items used in the workplace
 - 4.2 How to prevent injury from electrical sources

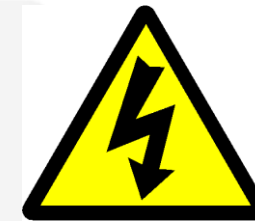


www.tcectexas.com



Electrical safety

Contact with electricity could result in minor harms such as electrical shock, and burns to fires and even potential death. The managers and proprietors must hence ensure that all electrical appliances in use are up to standard whilst employees working with the aid of them are well trained.



4.1 Assessment of electrical items used in the workplace

In order to meet the requirements of **Electricity at Work Regulations 1989** a list of all electrical equipment in the work environment needs to be compiled. The register will, in turn facilitate equipment maintenance programmes and visual inspection procedures. From the list of equipment where each appliance has been coded it would then be PAT (Portable Appliance Testing) tested, inspected and either repaired or replaced.



Electrical safety

4.2 How to prevent injury from electrical sources

- Measure to control the risks and prevent injury from electrical sources will involve:
- Ensuring appliances are turned off when not in use
- Handling the appliance as instructed
- Not leaving machines unattended or switched on
- Not over loading the power sockets
- Not using appliances with damaged plugs or exposed wires

In the case of an electric shock the following steps should be taken:

- The human body conducts electricity so avoid touching victims of an electrocution as its could be dangerous
- Turn off the main power supply
- Call the emergency services
- Resuscitating the individual if required
- If the patient is breathing, talking reassuringly to them till emergency services arrive
- Cover any burns and blisters with dressings.



Risk assessments and safe systems of work

5. Risk assessment of electrical items used in the workplace
 - 5.1 Identification of hazards
 - 5.2 Risk prevention
 - 5.3 Consequences of hazards
 - 5.4 Monitoring and review procedures



www.irishjobs.ie



Risk assessments and safe systems of work

Under the **Health and Safety at Work Regulations** it is a requirement to undertake a risk assessment to assess any risks to employees or anyone who comes in to contact with the business

The risk assessment is the identification of hazards in the workplace and these may be categorised from three key areas.

Workplace	- General layout and fabric of the building
Activity	- Physical use of machinery or processes
Environmental	- Dust, vapour, toxic gases

The risk assessment is carried out for all activities and equipment etc within the business.



Risk assessments and safe systems of work

5.1 Identification of hazards

Hazards that maybe identified in a working environment include:

- Slips, trips and falls
- Stress
- Chemical hazards
- Vehicular accidents
- Falling objects
- Noise
- Vibration
- Machinery, tools and equipment
- Electricity
- Fire
- Incorrect lifting, moving, pulling methods
- Extremes of temperature
- Microbiological
- Cuts, and amputations



Risk assessments and safe systems of work

5.2 Risk prevention

The employer must ensure that the business premises are maintained in good repair and condition which, in turn, allows for effective cleaning.

Everyone has a responsibility and a duty to care to others and is so doing must report any concerns regarding possible risks exposed in the work environment, so that relevant action could be taken to prevent and the risk element.

Contractors to site may also have to provide a risk assessment and a “**permit to work system**” when there is a high level of risk in the work activities involved.

- These activities may include:
- Use of highly flammable substances
- Welding
- Isolated environments
- Enclosed and confined spaces



Risk assessments and safe systems of work

5.3 Consequences of hazards

The consequences of hazards resulting in serious injury, or even death in some cases may result in an investigation by the HSE (Health and Safety Executive) for the more serious accidents.

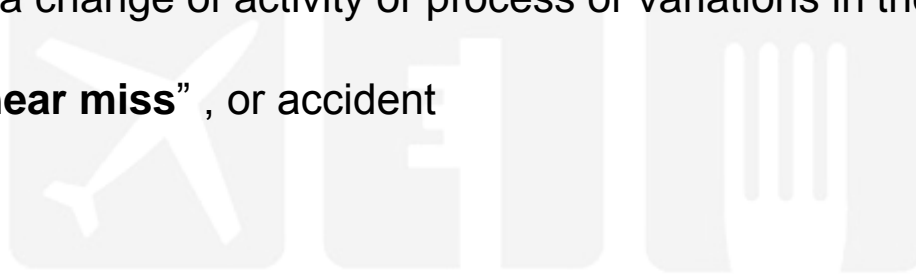
Prosecutions for contraventions to the Health and safety at Work Regulations may result in penalties of up to **£20,000 per offence** and in more serious situations **unlimited fines or imprisonment**.



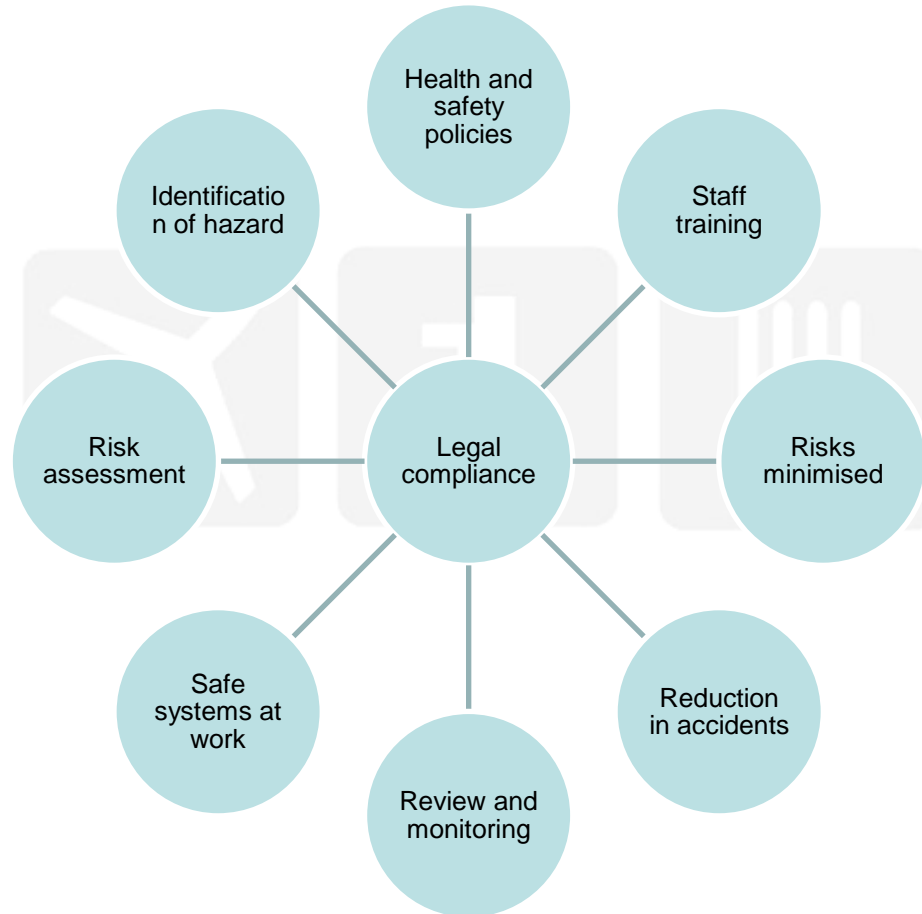
Risk assessments and safe systems of work

5.4 Monitoring and review procedures

- The risk assessment and safe systems of work need to be reviewed:
- When machinery is replaced or modified
- When there is a change of activity or process or variations in the workplace environment
- Following a “ **near miss**” , or accident

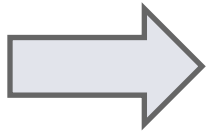


Summary



Chapters

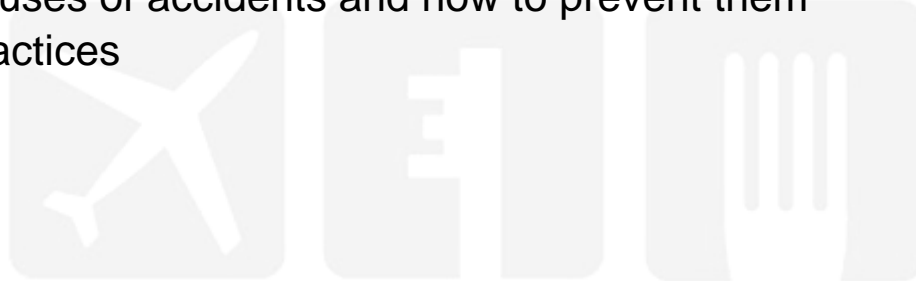
1. Introduction to food & safety
2. HACCP (Hazard Analysis Critical Control Point)
3. Creating a safe environment
4. Working with health and safety
5. Fire safety



Objectives

In this chapter you will learn,

- Health and safety compliance in relation to the work environment
- The common causes of accidents and how to prevent them
- Safe working practices



Premises design and layout

4. Premises design and layout

4.1 Work flow

4.2 Equipment design and layout

4.3 Adequate storage and work space

4.4 Waste disposal



Premises design and layout

4.1 Premises design and layout

From a health and safety perspective, the planning stages are crucial in the development of constructing new buildings or preparing to refurbish old buildings. Designers and architects need to comply with both planning/health and safety regulations that are pertinent to the business activity.



Premises design and layout

The workplace (Health, safety & welfare) Regulations require that the workplace meets specific criteria for environmental, structural and welfare provisions

Environmental – The provision for adequate light, ventilation, surface that can be easily cleaned, sufficient work space/dedicated work station and seating, and provision for waste management.

Structural - The premises should be of a sound structure and fit for the business activity and made from materials applicable to the business operations. Entrance and exits need to be clearly signed. Hand-rails on stair ways and for disabled areas need to be secure. The risk of injury from falling objects should be prevented. Walk ways and pedestriained areas must be clearly identified to avoid risks from moving vehicles such as warehouse cherry pickers and fork lift trucks.

Welfare – The premises should provide adequate provision for staff changing/washing, toilet and rest room areas. Potable water with drinking vessels should be included in the design unless provided by means of a drinking fountain.



Premises design and layout

1.1 Work flow

The workflow pattern of business activities benefit from linear design creating dedicated flow/work areas for different elements of the business activity. This will assist in health and safety management and prevent or reduce the risk of accidents in the work place. This process will also ensure a relatively stress free and more pleasant environment in which to work.



Premises design and layout

1.2 Equipment design layout

The premises must allow for adequate space aligning equipment with areas for work activity that will not compromise safety.

There must be allowance for sufficient storage, enabling the business activity to be free from obstacles which in turn will promote good health and safety and working practices.

Adequate space should be there around the machinery to allow for ease of movement during the work process so that the safety of the operative and of those individual in the vicinity is not compromised. There must be allowance for the repair and cleaning process involved. The equipment should be used according to the manufacture's instructions and training or PPE should be given prior to use.

Safety devices and guards must be fitted at all times and dedicated planned and/or preventative maintenance programmes in place to ensure the efficiency of the equipment and legal compliance.



Premises design and layout

1.3 Adequate storage and work space

Suitable storage within the premises will prevent obstructions from items needed to conduct the activity and prevent obstacles from being stored in passage ways or work areas which may contribute to a health and safety related incident. The ordering of goods should follow the 'just in time' principle of stock rotation so they are not left in places that are not designed for their storage.

The work space should allow for free movement to conduct the work-based activity without risk of obstacles or obstruction. Due consideration needs to be given to the number of people expected to work in a specific work space, together with the provision for equipment and furniture. Seating provided at workstations should give adequate support for the lower back and a footrest should be provided if necessary. A workstation risk assessment should be carried out to ensure the workplace is effective and is not going to cause stress or risk to the employee.



Premises design and layout

1.4 Waste disposal

In the design and construction of premises due consideration must be given to the management of waste and its disposal. It is a legal requirement to ensure a clean environment with measures in place to support refuse removal. This will promote a 'clutter free' and clean environment, reduce the risk of fires from refuse accumulations, pest infestation and accidents caused by obstructions or obstacles.

Types of waste may include packaging, paper, trade waste, old and redundant pieces of equipment and food waste.

Hazardous waste may include material that is harmful to humans or the environment and may include:

- Waste oils
- Solvents
- Asbestos
- Lead acid batteries
- Electric equipment



Premises design and layout

1.4 waste disposal continued

Waste oil

There is a duty of care to the environment and legal requirement to support the correct method of disposal to ensure no spill or leakages enter drainage systems or watercourses that would ultimately pollute environment.

The business must ensure that the waste oil is collected by waste contractors who are registered and licensed with an Environment Agency. A waste transfer note is required to support the requirements. Waste transfer notes are a legal requirement under the **Environmental Protection (Duty of Care) Regulations 1991** and must be kept for a minimum of two years.

It is an offence to:

- Pass used catering oil to an unauthorised person
- Throw used catering oil in the general waste bin
- Pour used catering oil down a sink or into a drain
- Allow used catering oils to enter the animal food chain



Premises design and layout

1.4 waste disposal continued

The Controlled Waste Regulations 1992 cover hazardous waste and include clinical waste (bodily fluids, swabs, dressing, general medical, dental, veterinary and pharmaceutical waste)

The Waste Management Licensing Regulations 1994 apply in most of the UK (England, Scotland, and Wales) to those person involved in the collection, storage, treatment and disposal of controlled wastes.

A license is required to authorise the:

- Deposit of **controlled waste** to land
- Disposal of waste by means of plant or equipment, which includes **compacting, incinerating, processing, shredding and composting**

Increasingly, recycling is expected of all members of society, including hotels and restaurants. Hotels can easily establish systems to recycle glass, cans, cardboard packaging and so on, and can also recycle kitchen waste for compost. Customers expect business to be aware of environmental concerns and act accordingly.



Accident reporting and recording

2. Accident reporting and recording

2.1 Accident investigation

2.2 RIDDOR

2.3 Near misses

2.4 First aid



Accident reporting and recording

An accident is an unplanned and uncontrolled event that has led to or has caused injury or damage. It is a legal requirement to record all such incidents.



www.reportanincident.com



Accident reporting and recording

2.1 Accident investigation

The manager or proprietor must ensure that all staff are trained in what to do in the event of major accidents, incidents or dangerous occurrences and that all such occurrences are formally investigated.

The business premises should have an accident book to document

- The name and address of the injured person
- Data and time of the accident
- Place where the accident occurred
- Cause and nature of injury
- Any witnesses, name/ address

The process will support the **Social Security act 1975** whereby employees must notify the employer of any accident which may result in benefit payment if a person is incapacitated to work.

The accident book will also support documented evidence in claim and compensation situations and ensure that a review of the controls are made to prevent another similar accident occurring.

An accident investigation to establish the cause of the accident and to prevent any reoccurrence should be carried out as possible after the incident. Not every accident necessitates a full, complex and formal investigation process but these must be completed in the event of RIDDOR



Accident reporting and recording

2.2 RIDDOR

Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 1995 stipulates the legal requirement for reporting certain work-related accidents by the quickest means possible.

This incidents include:

- Death – Where someone has been killed in a work-related activity.
- Major injury – Which includes amputation, loss of sight, loss of consciousness.
- Disease –When the employee reports confirmation from the doctor of a notifiable disease.
- Gas incident – Where a person is injured or dies as a result of gas that you have distributed, filled, imported or supplied.
- Over a three-day-injury - when a work-based activity results in an employee being off work for more than three consecutive days.

It is a legal requirement to keep records of **RIDDOR** accidents for at least three years



Accident reporting and recording

RIDDOR continued...

An investigation process should be carried out by a competent person and the following details obtained:

- A brief description of the accident
- Confirmed witnesses' statements
- Investigation and establishment of both obvious and underlying causes for the accident
- Recommendations to prevent recurrence
- Compilation of witness statements, photographs, sketches for the accident investigation and file following the investigation, recommendations should be made to prevent a recurrence of the incident



Accident reporting and recording

2.3 Near misses

A near miss- An unplanned incident that could have resulted in harm or damage but did not actually occur, but must be documented and recorded in the accident register



Accident reporting and recording

First aid

Under the **Health and safety (First Aid) Regulations 1981** the premises must comply with the requirements to provide first aid kit and/or on site first aiders. Depending on the number of employees, the place or type of work and category of risk will determine the level of required first aiders.

There must be a minimum of one first aid kit to include, dependent on the workplace and the associated risks, instructions or guidance notes and;

- Sterile scissors
- Two sterile eye pads
- Twenty individually wrapped sterile adhesive dressings
- Four individually wrapped sterile triangular bandages
- Six safety pins
- Six medium and two large unmediated sterile wound dressings
- Sterile disposable gloves

There should be no tablets or medicines in the first aid box



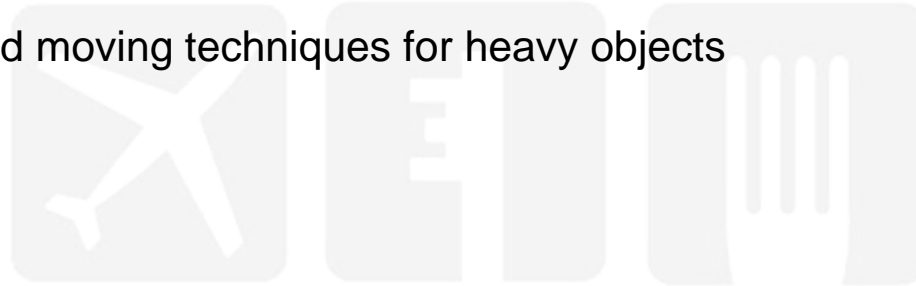
Manual handling

3. Manual handling

3.1 Assessment of risks involved

3.2 Handling and lifting activities

3.3 Safe lifting and moving techniques for heavy objects



Manual handling

Manual Handling

The handling of loads is a common cause of injury at work and every effort should be taken to reduce the risks. One of the best ways of prevention is to train people to lift and carry loads correctly. It is the responsibility of managers and supervisors to make staff aware of these procedures

If a member of staff feels the task set is beyond their capability they must bring this to the attention of their manager who must, in turn, provide the necessary assistance.

The manager or business proprietor must assess the task to determine the risk, what is required to reduce the risk and what equipment may be needed to support the individual and the work activity. Personal protective equipment in the form of gloves, aprons, overalls, safety footwear etc. may be necessary,. Consider alternative methods of handling if there is risk from the contents.



Manual handling

Injury Statistics

Over **35%** of food contain and drink industry injuries reported to **HSE** are manual handling casualties, such as back injuries. This represents over 3,200 acute injuries per year caused by handling and lifting ; 60% of which involve lifting heavy objects.

In addition, workers carrying out lighter repetitive tasks, e.g. working on production lines, can suffer chronic (persistent) injuries, such as work-related upper limb disorders (WRULDs) such as tenosynovitis and carpal tunnel syndrome account for:

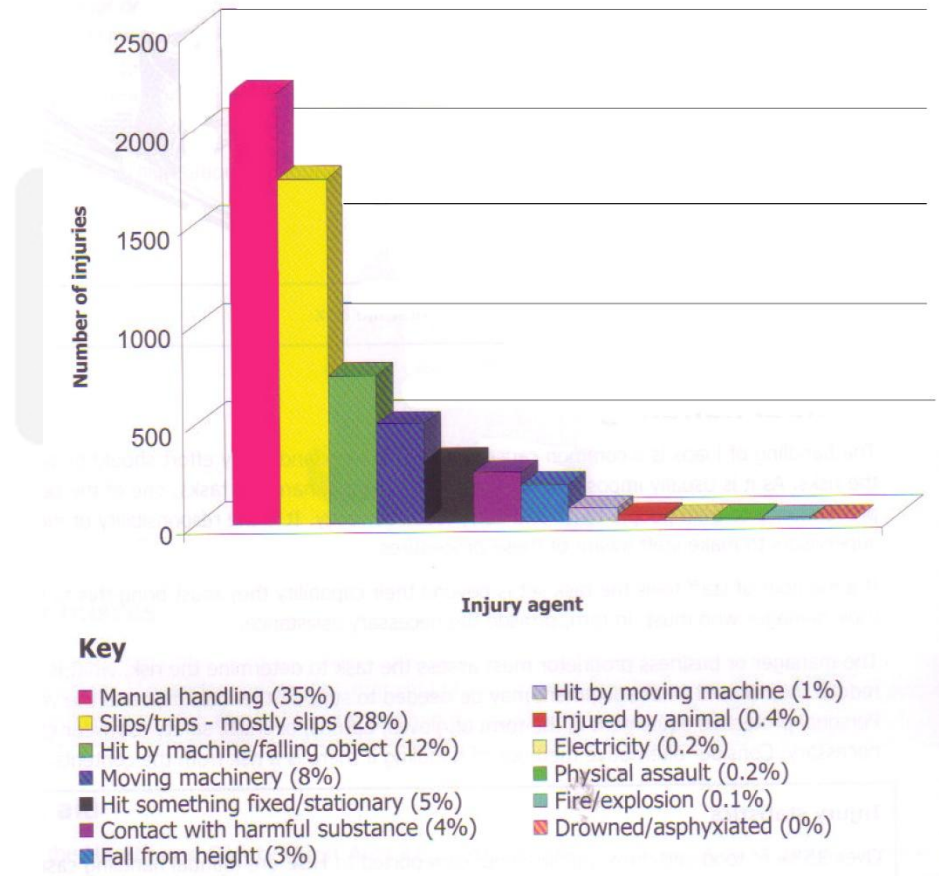
**38% of compensation cases under the Department of Work and Pension Industrial Injuries Scheme, and
74% of case of occupational ill health reported to HSE under RIDDOR.**

source: HSE



Manual handling

Causes of Injury in Food and Drink manufacture 2006/2007
 Analysis of 6,138 major and over 'three-day absence' injuries



Manual handling

3.1 Assessment of risk involved

The task needs to be evaluated to determine what is required to deal with the load. Will it involve;

- Reaching upwards
- Bending down
- Long carrying distances
- Stooping
- Twisting



Manual handling

The task

Improving the task layout

- Using the body more efficiently
 - Hold the load close to the body. Place feet close to the load. Replace lifting by controlled pushing or pulling.
- Improving the routine
 - Consider changes to the frequency of handling, flexible break/rest periods, and job rotation
- Handling while seated
 - Not a recommended practice other than for small, light loads
- Team handling
 - Ensure adequate space, access and handholds.
- Personal protective equipment
 - Gloves, aprons, overalls, safety footwear etc. may be necessary. Consider alternative methods of handling if there is a risk from the contents such as mechanisation, fork lift trucks.
- maintenance and accessibility of equipment to support the movement of loads. All equipment must be well maintained.



Manual handling

3.1.2 The load

- **Make it lighter**

Consider products in small containers. Sort the goods into weight categories, making them smaller

- **Easier to hold or man oeuvre**

Consider handles, handgrips and indents.

- **Stability**

Containers holding liquids or powders should be well fitted. Alternative means of handling should be considered.

- **Less hazardous to hold**

Loads should be clean. Sharp corners, jagged edges, etc should be avoided. Use handling aids or personal protective equipment. Consider risk from hot or very cold surfaces, equipment and products



Manual handling

3.1.3 Working environment

- **Remove obstacles/obstructions**
Make sure there is enough room. Maintain high standards of housekeeping
- **Condition and nature of floor**
Flat, well maintained and properly drained, assess leaves if sloping
- **Temperature**
Maintain a comfortable working temperature
- **Lighting**
Sufficient lighting is essential for visibility for transportation



Manual handling

3.1.4 Individual capacity

- Personal capacity
Consider individual's concern regarding their suitability for manual-handling duties including age, sex, pregnancy and medical disability
- Knowledge and training
The handling operations should be designed to suit the individual. Employees should be involved in the development and implementation of manual-handling training and the monitoring of its effectiveness.
- Attention must be given to
Recognition of hazardous loads, dealing with unfamiliar loads, use of handling aids, use of PPE, the working environment. Importance of good house keeping, good handling techniques



Manual handling

3.1.4 Individual capacity continued.....

Main causes of musculoskeletal injury

In the food and drink industries, most musculoskeletal injuries from just five cases

- Stacking/ unstacking containers (such as boxes, crates and shakes)
- Pushing wheeled racks (such as oven racks and trolleys of produce)
- Cutting, boning, jointing, trussing and evisceration (such as meat and poultry)
- Packing products (such as cheese, confectionery and biscuits)
- Handling drinks containers (such as delivery of cakes, kegs, and crates)

These are key tasks to which attention should be paid when carrying out risk assessments.



Manual handling

3.2 Handling and lifting activities

The frequency of move, lift or carry something in the workplace depend on the type of business. In kitchens goods storage space is required, but in some environments there are dedicated people to handle this type of tasks.

Typical example of handling and lifting activities in the catering business:

- Food delivery
- Cleaning materials deliveries
- Transporting deliveries to vending machines
- Transporting goods to the dining and service areas (cutlery, crockery, glassware)
- Carrying trays of food to the tables
- Carrying clean crockery from dish wash area
- Movement of dirty tray trolleys to the dish wash area
- Service from platters during silver service function
- Lifting items from a 'dumb waiter'

It is, therefore, essential to train employees in moving, pushing, pulling, lifting and carrying items to reduce the risk of harm and musculoskeletal injury.



Manual handling

How do we know if we have a problem?

Injury and health problem show up in different ways like,

- Injury to back and limbs
- Aches and pains
- Poor product quality
- High material waste
- Low output
- Frequent workers complaints and rest stops
- Do-it-yourself improvements to work stations and tools(eg seat padding)
- Workers wearing bandages, splints, rub-ons, copper bracelets or magnets



Manual handling

3.3 Safe lifting and moving techniques for heavy objects

It is important not to lift or handle more than an individual can manage safely; therefore some essential points to note to lifting are required:

- **Stop!-assess the load**

Where to transfer? Is additional equipments needed? Is the person capable of lifting the load weight?

- **Check the destination point**

Are there any obstacles in the way?

- **Adopt a suitable position**

Stand close to the object with the feet 25 to 30 centimetres apart and with one leg slightly forward to help maintain balance

- **Establish a firm grip on the load**

Use the whole hand to maintain a firm grip, and hold the load close to the body



Manual handling

- **Maintain the load as close to the body at waist level**
The distance of the load from the spine at waist height is an important factor in the overall load on your spine and back muscles
- **After an initial flexing of the back, don't flex the back any further during the lift**
It happen when the legs being straiten before starting to raise the load
- **Try and avoid twisting your body or leaning sideways**
During the lift shoulders has to be in the same direction to the hips
- **Keep your head up**
- **Do not make any sudden movements**
Rapid movements may increase the risk of injury
- **Place the load down and reposition where necessary**
When putting the load down and lower the load as to lift it, put the load and slide it in to the desired position



Manual handling

When pushing or pulling a heavy object

- Ensure hands are not below knuckle height or above shoulder height
- Ensure appropriate footwear is worn and that the floor surface is not slippery or wet to reduce the risk of slipping
- Ensure there are no obstructions or obstacles in your path
- Tuck the chin in
- Keep the back and arms as straight as possible
- TO PUSH – Emphasis with the front foot and use the back-foot to maintain balance



Manual handling

Manual handling -summary

- Identify and asses the risk
- Provide training and instruction
- Reduce weights/loads
- Provide assistance or mechanisation



Vehicle and pedestrian safety

4 Vehicle and pedestrian safety

4.1 Safety guidelines to be followed while at work

4.2 Risk in the workplace



Vehicle and pedestrian safety

When you work in warehouse environment accidents can happen with fork lift trucks and delivery bays, and where the vehicles include like car parks, garages and farms. Employees must be adequately insured for the vehicle if operated both on private and public roads, trained and instructed in their use.

4.1 Safety guidelines to be followed while at work

- Always follow the pedestrianised route as indicated
- Listen and look for vehicular activity
- Wear high visibility jackets or reflective strips
- Observe warning signs and safety instructions
- Follow instructions given in the use of the vehicle
- Report any defects or hazards associated with vehicular activity
- Do not use a vehicle if you have not been trained or are not insured to do so
- Do not drive if you are not medically fit to do so



Vehicle and pedestrian safety

4.2 Risk in the work place

- **Moving vehicles** – fork lift trucks in warehouse environments
- **Unstable loads** from moving vehicles causing objects to fall off and possibly cause injury
- **Fire/ explosion hazard** from combustible materials such as petrol, oil and diesel
- **Loading** while a vehicle is in motion
- **Using a vehicle under the influence of alcohol or drugs**
- **Not wearing PPE**; safety shoes to prevent hard or heavy objects crushing the feet, high visibility work wear to enable you to be seen more easily by drivers of vehicles
- Using a mobile telephone while driving



Chemical safety

5. Chemical safety

5.1 Chemical use and storage

5.2 Warning signs



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Chemical safety

The main regulation in relation to the use and storage of chemicals is the **Control of Substances Hazardous to Health Regulations 1999**

The regulations require that all chemicals used or stored on premises are assessed so as to ensure that :

- They are appropriate to the tasks for which they are required
- They are the safest product available
- Where an element of risk exists, safety precautions and safe systems of work have been established

The suppliers of the chemical to the business should provide **Safety Data sheets** and **COSHH Assessments** for each of for each of the chemicals provided.

These will support the requirement of detailed product information in the event of an emergency and medical intervention.

PPE should be made available for use with chemicals and will include:

- Goggles to prevent chemical splashes from getting into the eyes
- Masks to prevent and reduce the risk of toxic fumes/in habitation
- Rubber gauntlets for cleaning with abrasive/caustic chemicals



Chemical safety

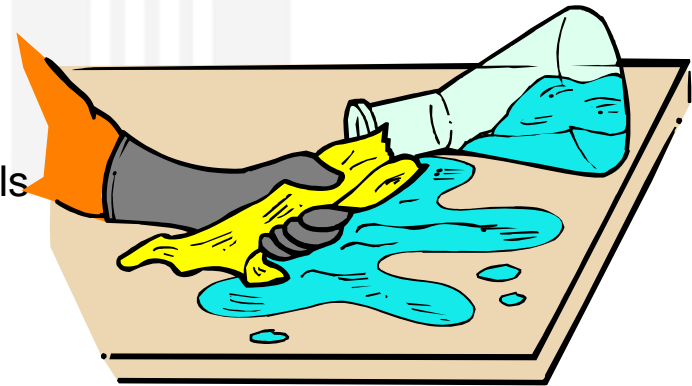
5.1 Chemical use and storage

Chemicals should always be used according to the manufacturer's instructions and staff need to be trained in their use.

The safety instructions supplied with the chemicals (**safety data sheet** – should be available with the chemicals at the storage facility).

Ensure that staff;

- Wear protective clothing and equipment
- Clean up spillages
- Understand the exposure limits to certain chemicals



Chemicals should be stored in dedicated, well ventilated locked cupboards or storage areas. The storage facility should be out of direct sunlight, and maintained away from foodstuffs



Chemical safety

Some practical tips for handling chemicals

Do

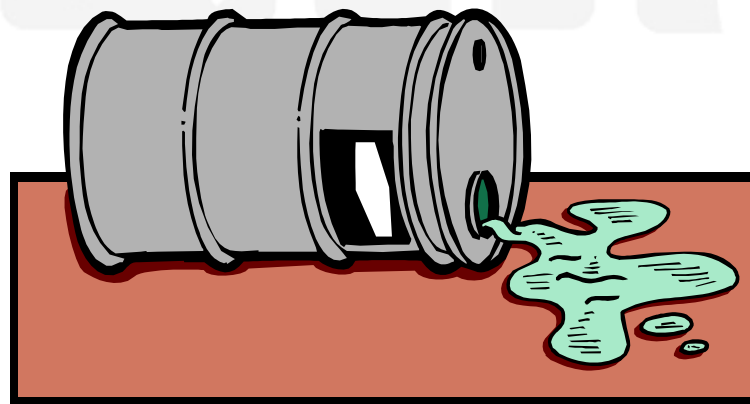
- Read the label and follow the manufacturer's instructions
- Wear cleaning chemicals in well-ventilated areas
- Use the correct dilution rates
- Never touch chemicals directly, always use a dispenser
- add the chemical to the water, not the water to the chemical when diluting
- Correctly label chemical containers, e.g. spray bottles
- Replace the cap and wipe the container immediately after use
- Wipe up any spillage's immediately they occur-follow the instructions on the chemical container
- Ensure chemicals are disposed of properly following the information given in the safety data sheet
- Report any symptoms of ill health immediately
- Wash your hands after using or handling chemicals



Chemical safety

Do not

- Eat or drink chemicals or transfer to containers such as old lemonade bottles as someone could accidentally drink the liquid resulting in serious consequences
- Mix chemicals as this may cause a chemical reaction or combustion
- Return unused chemicals to the bulk container
- Use chemicals you are not trained and authorized to use
- Use chemicals for a task they are not intended for



Chemical safety

5.2 Warning signs

Dedicated equipment for the work activity is required to reduce the risk of chemical and in some cases bacterial contamination from one activity to another.



Warning signs are triangular in shape with yellow background, black borders with symbols and text. These should be strategically placed at the site of the potential risk to reduce the possibilities of an accident or incident occurring. These signs may demonstrate;

- Wet floor
- Slippery floor
- Caution
- Highly flammable



Personal Protective Equipment (PPE)

6. Personal Protective Equipment (PPE)

6.1 What is personal protective equipment

6.2 types of PPE

6.3 When PPE should be used



Personal Protective Equipment (PPE)

Some jobs require additional protective work wear to protect the employee or worker from potential hazards in the work environment. It is a requirement of the **Health and safety at Work Act** that PPE is approved and made available for these activities.



Personal Protective Equipment (PPE)

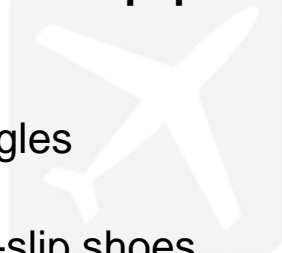
6.1 What is personal protective equipment

PPE is provided by the manager or business owner to protect the operative from injury or harm when carrying out an activity with one or more associated

PPE-Personal Protective Equipment

6.2 Types of PPE

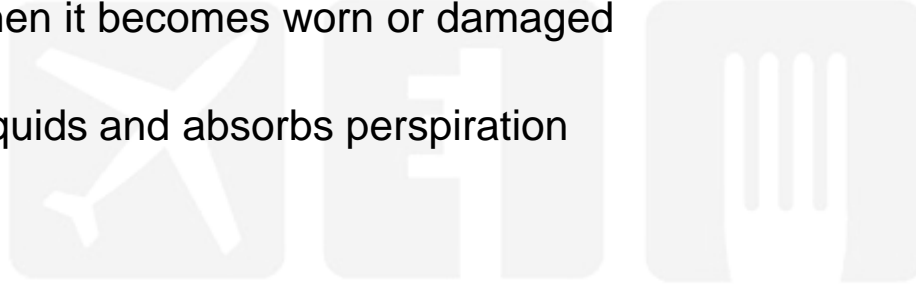
- Masks and goggles
- Hard hat
- Safety and non-slip shoes
- Bullet proof vest
- Heat retardant overalls
- Ear defenders
- High visibility jackets/ trouser
- gloves



Personal Protective Equipment (PPE)

It is important that any protective foot wear provided to employees

- Fits properly
- Is appropriate for the floor surface
- Is maintained in good caution
- Is replaced when it becomes worn or damaged
- Is flexible
- Resistant to liquids and absorbs perspiration



Personal Protective Equipment (PPE)

6.3 When PPE should be used

To ensure that PPE is used safely it must be;

- Suitable for the activity
- Suitable for the person who will wear it
- Maintained in good condition
- Replaces as and when necessary

Typical examples of those activities with risks that require protective work wear would be

Emergency services – Heat retardant overalls, hard hat, safety shoes, breathing apparatus (Fire service)

In the case of fire service

- Fire retardant/heat resistant overalls are crucial to their safety
- Wearing safety shoes protects from heavy falling objects in damaged buildings
- Masks/ breathing apparatus protect from potential toxic fumes and smoke inhalation



Personal Protective Equipment (PPE)

Mechanical engineers - Safety shoes, protective overalls, face shield

Engineers requires;

- Safety shoes to protect them from heavy equipment during mechanical processes
- Protective overall and face shields during welding processes

Construction workers - hard hat, high visibility jacket

workers in the building industry come into contact with many risks including falling objects such as masonry during demolition and hard hats are essential wear. High visibility jackets are needed to ensure they are noticeable at all times during the movement of vehicles and machinery

Laboratory technicians - Goggles, masks, gloves, overalls

Those involved in the laboratory and dealing with chemicals need to wear goggles and masks to avoid inhalation of potential toxic fumes and to avoid chemical splashes to their eyes and skin.

Food production staff - Safety/non-slip shoes, metal glove

safety/non-slips shoes are essential for kitchen personnel to reduce the risk of slips to protect the feet from falling objects or preparation from knives and sharp implements. Protective clothing has two main purposes in food preparation areas;

- To protect the food from dirt and germs that are carried on personal clothing
- To protect you and your clothes from dirt and chemical splashes, eg during cleaning operations



Personal Protective Equipment (PPE)

Specialist cleaners - masks, goggles, gloves

Specialist contractors that deal with more serious in depth cleaning will require masks and goggles to protect from chemical splashes and possible blood contamination, as well as gloves so that direct contact with cleaning fluids and other contaminant do not come into direct contact with the skin

Factory worker - Ear defenders

In noise manufacturing warehouse it would be important for operatives to wear noise defenders to protect their ears from high decibel levels and subsequent long term hearing damage.

Staff training, instruction and supervision of staff incorporate:

- The risks which the PPE will avoid or limit
- The purpose for, and the manner in which, PPE should be used
- Action required by the employee to ensure that the PPE remains in efficient working order and in good repair



Noise and vibration

- 7 Noise and vibration
 - 7.1 Noise at work regulations
 - 7.2 Exposure to noise and noise control strategies



Noise and vibration

Noise can be a **safety hazard** as it can interfere with verbal communication, create stress, cause concentration fatigue, tension and irritability. Vibration and exposure to some chemicals and drugs can reinforce the damaging effect of noise. Some drugs (including aspirin) and other chemicals can affect hearing directly.

Vibration can be caused from working with power tools such as pneumatic drills which can cause **vibration white finger**.

High noise levels in the workplace can predispose a worker to serious health risks, ranging from mild temporary hearing impairment to complete deafness, it is therefore, essential that steps are taken to control noise that may affect employees and other people within the environment.



Noise and vibration

People are likely to be at risk if they:

- Work continually in a noisy or loud environment for much of their shift, eg bars and night clubs
- Work with or are surrounded by noisy power tools and machinery, eg pneumatic impact tools, etc
- Work with explosive devices such as detonators or guns

Instruction and training

Staff should receive information and training to help them understand and deal with noise-related risks. This should cover:

- The risks with measures to eliminate or reduce them
- Any noise-control/hearing protection measures, and use/training in the use of (PPE)
- Reporting any defects in PPE and alerting any noise-related hazards to the manager



Noise and vibration

7.1 Noise at work regulation

The Health and safety at Work Act 1974 covers the control of noise in the general duties of employers; namely ‘the provision and maintenance of a working environment for employees that is, so far as is reasonably practicable, safe, without risks and adequate as regards facilities and arrangements for their welfare at work’.

The Control of Noise at work regulations 2005 came into force in April 2006. However, music and entertainment businesses (pubs, bars) were exempt from the regulations until April 2008.

The level at which employers must provide hearing protection and hearing protection zones is now 85dB (daily or weekly average exposure) and the level at which employers must assess the risk to workers’ health and provide them with information and training is now 80dB. There is also an exposure limit value of 87dB, taking account of any reduction in exposure provided by hearing protection, above which workers must not be exposed.



Noise and vibration

7.2 Exposure to noise and noise control strategies

Where there is a significant exposure to noise especially in manufacturing and construction processes the employer or business owner is required to undertake a formal **noise risk assessment**.

These processes will involve:

- Who is affected by exposure to the noise?
- Demonstrating how hazards can be adequately controlled.
- Periodically reviewing if the assessment is no longer valid or there has been a significant change in the work to which the assessment relates.

Controlling the risks to eliminate or reduce noise levels can be done by determining if the activity or process can be changed, for example replacing a noisy machine with a quieter one introducing sound absorbent materials. **PPE** should be worn to protect the employee from noise risks and may consist of ear defenders/muffs and so that the PPE or hearing protection works effectively, ensure that:

- It is done in good, clean condition
- Undamaged
- Replaced if not fit for purpose



Working at height

8. Working at height

8.1 procedures

8.2 Risks and safety precautions



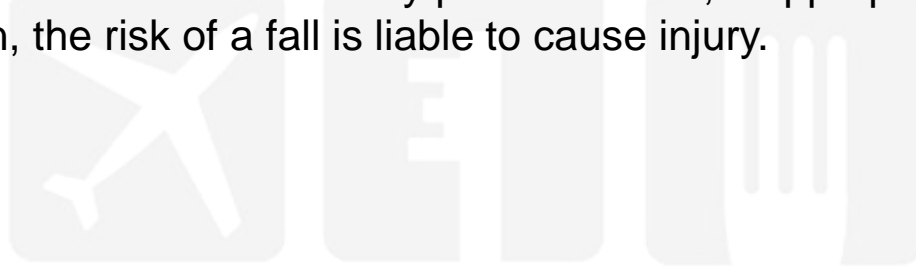
www.cmse.ie



Working at height

The Working at Height Regulations 2005 were amended in April 2007 removing the exemption that previously applied to people who were paid to lead and train climbing and caving activities in the adventure sector.

Working at heights is classified as work in any place in which, if appropriate preventive measures weren't taken, the risk of a fall is liable to cause injury.



Working at height

8.1 Procedures

The working environment and conditions are critical to safety when working at height. For instance for external maintenance to a building to be carried out weather plays a vital role. There is also a requirement to assess how many people maybe needed along with the equipment required.

Other factors that determine the safety of working at height would be to assess the:

- Stability and evenness of the base level
- Obstructions
- Fragile surfaces
- Ability of floors to support weights
- Risks such as roads
- Environmental conditions

A full 'working at height' risk assessment needs to be carried out prior to the commencement of any work.



Working at height

8.2 Risk and safety precautions

These apply to all those who work at height regardless of the duration etc.

Examples include:

- Using a ladder or step ladder for cleaning
- Painting, pasting or erecting signs at height
- Work on raised platforms
- Working on roofs
- Tree surgery
- Climbing permanent structures
- Working in an excavation area
- Working in a bar with an open cellar hatch during deliveries

All the equipment associated with the work activity must be inspected to check it is safe. Everyone involved in working at heights needs to be specifically instructed and trained in the activities required with a dedicated safe system of working applicable to the task.



Working at height

Personal fall protection equipment includes:

- Work restraints
- Work positioning
- Rope access
- Fall arrest systems

Personal fall protection equipment should only be considered if cherry pickers (motorised raised platforms) and scaffolds are not practical.



Slips, trips and falls

9. Slips, trips and falls

9.1 Hazards

9.2 prevention.



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Slips, trips and falls

The most common cause of most accidents in the work place are slips, trip and falls. Some of these maybe caused by carelessness, poorly managed or maintained premises. In order to reduce such accidents, businesses should include this in their general or area risk assessments, and take appropriate steps to control the risk.

Slips and trip injuries can be prevented by ensuring clean and tidy working conditions. No building will be free from slip and trip hazards unless positive action is taken.

The Workplace (Health, safety and Welfare) Regulations 1992 set out some key criteria regarding the construction of floors.

- The floor should have no holes nor should it slope or be uneven so as to expose person to risk.
- So far as reasonably practicable , floors should be kept free from obstructions and from any article which may cause a person to trip.
- Waster materials should not accumulate on floors except in suitable receptacles.
- Anti-slip coatings should be fitted wherever possible.



Slips, trips and falls

9.1 Hazards

Many of these events can be prevented by taking the appropriate preventive action, and from everyone being observant in their work environments.

Some common examples of slip, trips and falls are noted below.

Slips

- Slippery, wet or greasy flooring
- Spillages
- Sloping surfaces
- Consideration droplets
- Snow/Ice
- Unsuitable footwear
- Loose mats on polished floors



Slips, trips and falls

Trips

- Obstacles in passage ways
- Loose floorboards/floor tiles/worn carpet
- Trailing cables
- Overhanging plants
- Change in surface level
- Uneven outdoor pavements/unstable kerbs

Falls

- Unstable ladders
- Loose harness attachments
- Moving escalators
- Badly fitting hand rails
- Open holes in the ground



Slips, trips and falls

9.2 Prevention

Slips

Floors should be cleaned regularly to remove the build-up of any grease residue, and spillages cleaned immediately.

The premises need to be well maintained to prevent leaks and so forth that cause slips from wet floors.

Warning signs must be placed at the point of any incident to warn staff and visitors of any possible risks. Safety shoes which have anti-slip flooring, will help to prevent and reduce the risk of slips in the



Slips, trips and falls

9.2 Prevention

Trips

Trips occur when an obstruction prevents the normal movement of the foot, resulting in a loss of balance.

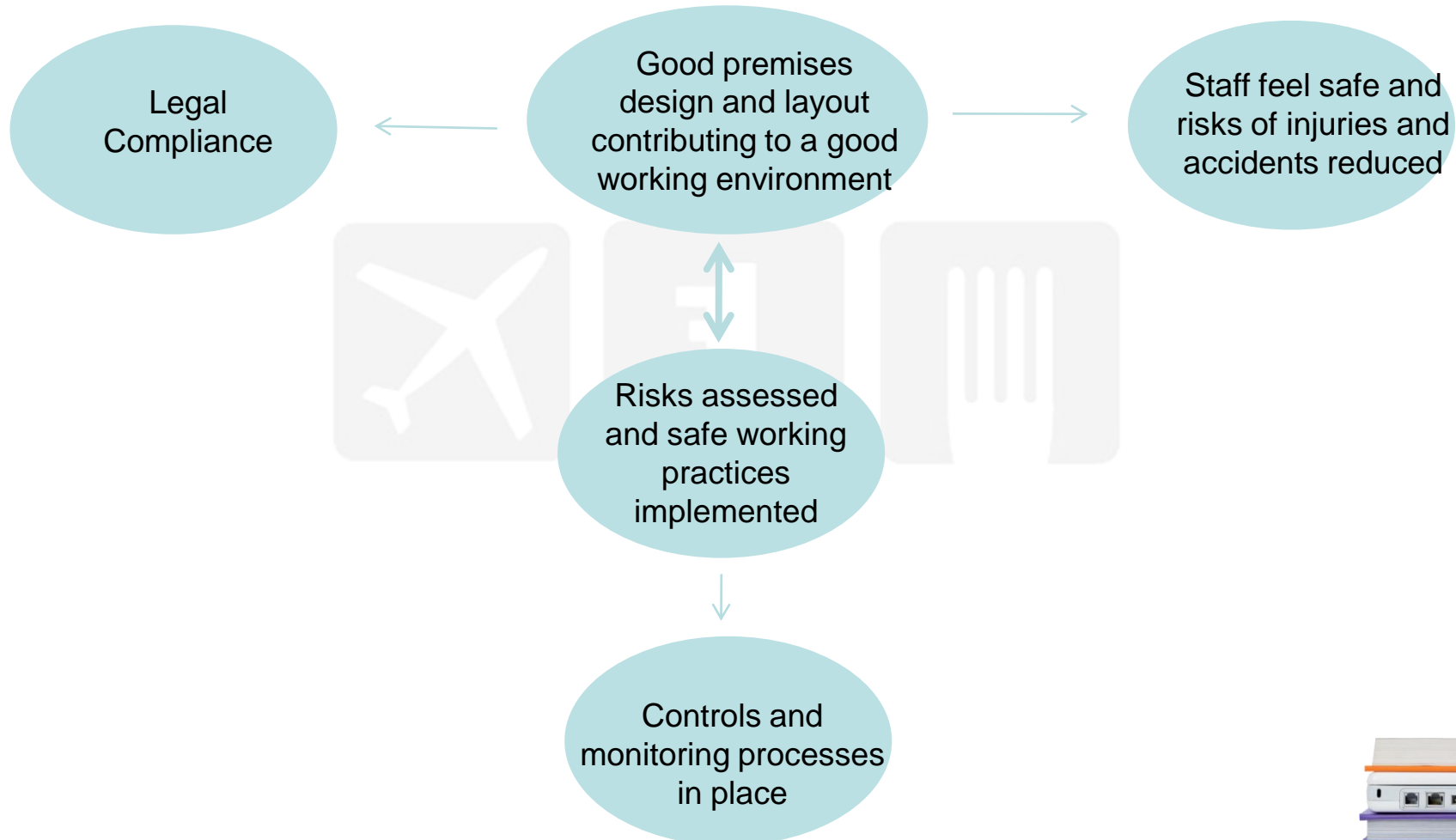
Trips can be avoided by ensuring that there are no obstacles in corridors or passage ways; that deliveries are placed in storage upon arrival; the premises are checked regularly for uneven flooring and loose flooring settings.

Falls

Precautions should be taken especially when working from heights to prevent falls, this can be done with appropriate safety harnessing etc. Everyone should exercise due care and attention and through visual observation and proper instruction these incidents can be reduced and accidents can be minimised.

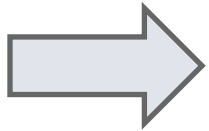


Summary



Chapters

1. Introduction to food safety
2. HACCP (Hazard Analysis Critical Control Point
3. Creating a safe environment
4. Working with health & safety
5. Fire safety



Objectives

In this chapter you will learn to :-

- The importance of identifying fire risks hazards
- What to include in a fire risk assessment
- Precautions to prevent fires
- What to do in the event of a fire



Fire safety legislation

1. Fire safety legislation
 - 1.1 Legal obligations
 - 1.2 Compliance
 - 1.3 Fire risk assessments



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Fire safety legislation

Fire can cause death and serious injury through smoke inhalation and severe burns. Fire can also be catastrophic to the business resulting in significant financial losses through not having insurance or adequate insurance cover.

In **October 2006** the **Regulatory Reform (Fire Safety) Order** came into force with the emphasis on three significant changes :

1. ‘ **Fire Certificates**’ became obsolete and are no longer issued
2. Fire safety is based solely on **risk assessment**
3. ‘**Premises**’ must have a ‘**responsible person**’ for fire safety – the person responsible for complying with the **fire safety order**.



Fire safety legislation

1.1 Legal obligations

All staff must receive fire safety training. The purpose of the training is to ensure that:

- Everyone is aware of the importance of fire safety
- The evacuation procedures can be carried out competently

Every new member of staff (temporary, casual) must be given training on fire safety at the start of their first day of work.

The training must be in a form that can be used and understood.



Fire safety legislation

1.2 Compliance

To demonstrate compliance, staff training and induction procedure must be in place together with fire risk assessments. The responsible person for fire safety must ensure that all reasonable steps have been taken to reduce the risk from fire and ensure that person can safety escape in the event of a fire.

Fire authorities are the primary enforcing agency for all fire safety legislation and can take action to server a prohibition notice or an enforcement notice and prosecute if a person or business fails to comply with the new regulations and so places employees at risk.

The penalties may result in fines and/or imprisonment for non-compliance.



Fire safety legislation

1.3 Fire risk assessments

The fire risk assessment can be prepared using the following steps:

Hazard identification

- **Sources of ignition.** (deep fat fryers, electrical equipment)
- **Source of fuel.** (disposables – paper, clothing, furniture, oil, etc)
- **Source of oxygen.** (oxidizing chemicals and oxygen cylinders)

Identify who could be at a risk

- People in and around the premises.
- People especially at a risk. (those work in isolate areas, people who are unfamiliar with the premises, people with disabilities)



Fire safety legislation

1.3 Fire risk assessments

Evaluate, remove, reduce and protect from risk

- Accidentally
- By act or omission. (when equipment is not properly maintained, or when waste is allowed to accumulate near to a heat source)
- Deliberately (arson)

Provide a record, plan and training

The fire safety risk assessment must be recorded.



Fire hazards

2. Fire hazards

2.1 Fire detection and warning system



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Fire hazards

There are potential fire hazards in most environments, what is important is to identify the potential hazards and how these can be controlled to minimize the risk of a fire.

A fire requires a source of **ignition, oxygen and fuel**. Therefore putting out a fire will involve the process of smothering, cooling and starving the fire of oxygen.

In case of fires at shop and retail premises the commonest causes of fires is related to deliberate acts of fire-raising (arson) and the risks associated with this act need to be recognized as part of the risk assessment.

The premises can apply certain preventive measures to ensure that opportunities for arson are reduced by observing some key measures:

- Check the premises before locking up for any potential dangers or risks, and check that all doors/windows are secured and alarms and security lighting switched on.
- Don't let rubbish become a threat for a vandals to act upon: paper and combustible material in open skips provided opportunities to start a fire.
- Arrange regular refuse collection
- Don't leave equipment outside enabling easy access or forced entry to your premises.



Fire hazards

- Be vigilant at all times: recognize behavioral patterns that may suggest your premises could be targeted, maybe even from staff that may hold a grudge.
- Limit opportunities for a fire to be started deliberately through gaps under doors, unstable window locks, letterboxes and hatches
- Check perimeter fences and possible entry routes for intruders



www.deatrainer.co.uk



Fire hazards

2.1 Fire detection and warning systems

Premises are required to have some form of a alarm mechanism to alert people and visitors to fire. These detection and warning systems may range from a shouted warning to a comprehensive electricity system.

The warning systems need to be checked periodically to ensure they are working and fire drills need to be held frequently to ensure that the employees and visitors know how to respond and evacuate in the event of a fire.



Fire prevention

3. Fire prevention



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Fire prevention

To reduce the risk of fires in the business environment it is important to reduce or eliminate the hazards:

- Remove rubbish and accumulations
- Check electrical equipment
- Maintain equipment in good working order
- Guard against naked flames

Maintenance of equipment is important to reduce the risk of fire. As a part of the premises' preventative maintenance program, equipment needs to be checked and monitored for signs of wear and tear which could give rise to potential fire risks.

Electrical equipment is a common cause of fire, arising from poor maintenance, incorrect use, overloaded electrical sockets, loose or incorrect wiring process, cabling being sited near naked flames or in contact with combustible materials.

Portable appliance testing (PAT) is carried out by businesses on a regular basis to check the integrity of earthing and insulation. This ensures that appliance is fit for purpose and in turn reduces the risk of injury harm during work-based activities.



Fire fighting equipment

4. Fire fighting equipment

4.1 Main types of the extinguisher and their uses



Fire fighting equipment

The business premises must have fire fighting equipment situated in all areas. It must be regularly checked and maintained by a competent person or a contractor, and must be pertinent to the associated risks of the business activity.

Main types of fire extinguisher and their uses

It is important to understand what type of extinguisher is used on certain types of fire. The wrong extinguisher used could have serious consequences. (E.g. water extinguisher on fat fires can cause a form of combustion).

Water-based – wood, paper and textiles, plastics (do not use on burning fat/oil/electrical appliances)

Foam – general fires and flammable liquids

Powder – general fires and plastics

CO₂ – electrical

Fire blankets – fats, oil (starvation of oxygen – important fighting deep fat fryer fires).



Safe evacuation in the event of a fire

Training must state the fire evacuation procedures and main escape route and alternative escape routes from all parts of the premises, where possible. Reasonable escape times are two minutes for high-risk premises, two-and-a-half minutes for normal-risk premises, and three minutes for lower risk premises.

Single escape routes may be acceptable if there are less than 60 people, or short travel distances. Where two escape routes are necessary they should be completely independent of each other.

Each and every member of staff must be aware of the safe escape route and that:

- The stairway and areas near the exit should be kept clear of combustibles and obstructions.
- The escape route should lead to a final exit.

Simple checklist should be prepared to ensure that all precautions have been taken to ensure staff are aware of what to do in the event of a fire.

- Training staff in the fire safety/evacuation procedures and relevant safe systems of work should be recorded on training records cards
- Fire safety risk assessments must be completed, controls implemented and reviewed
- Periodic fire/ emergency evacuation drills must take place
- An emergency evacuation plan drawn-up for the business premises



Safe evacuation in the event of a fire

Be familiar with your escape route: follow the **green signs** highlighting the evacuation path.

- Don't run or panic
- Don't collect personal belongings
- Switch off equipments if safe to do so
- Close windows and doors if safe to do so
- Don't use lifts
- Don't go back into the building until it is safe to do so
- Go to the assembly point

It is important to ensure that assembly point are well away from the likely source of danger and that **safety signs** are available to help people identify escape routes and find fire fighting equipments **Safety notices** must be prominently displayed.

The business also need to be aware of people needing assistance to escape. (young children, the elderly people, the disabilities)



Safe evacuation in the event of a fire

There needs to be a sufficient number of trained staff available to ensure speedy evacuation. The following facilities for evacuation disabled people may also be requirement:

- Rams
- Evacuation chairs on stairways
- Evacuation lifts
- Refuges



Summary

