Food Industry Guides to Good Hygiene Practice

Industry Guide to Good Hygiene Practice

Vending & Dispensing

Retained Regulation (EC) 852/2004 on the Hygiene of Foodstuffs

Recognised by

Food Standards Agency
food.gov.uk

Food Standards Scotland


DRAFT

Contents

Foreword

AVA: The Vending & Automated Retail Association

The AVA - is the trade body and voice for the automated 24-hour food and beverage industry.

Our members are part of a £3.1bn* industry and we represent nearly 200 companies managing almost half a million machines* across the UK. There is a range of member companies involved: machine manufacturers, ingredient manufacturers, cup manufacturers, food product suppliers, vending operating companies, wholesalers and service providers.

We support our members with government lobbying, best practice guidance and collaboration opportunities, whilst championing industry-wide quality, innovation and consumer satisfaction.

Every business shares the common goal and necessity of serving safe food. This latest iteration of the *Industry Guide to Good Hygiene Practice* is designed to offer advice and guidance to operators, aiding them in complying with legal obligations regarding the hygiene of foodstuffs. This ensures the safety of the food and drinks served to customers across the UK. The *Industry Guide to Good Hygiene Practice* has long been a reputable resource for both operators and environmental health practitioners.

As the sole vending and dispense industry hygiene guide officially recognised by the Food Standards Agency and Food Standards Scotland, it stands as the comprehensive document outlining standards for compliance and best practices essential for all catering businesses. This guide serves as the primary resource for Food Enforcement Officers during business inspections. It is imperative for ensuring your business adheres to regulations and is deemed indispensable for every catering enterprise.

David Llewellyn
Chief Executive
AVA: The Vending & Automated Retail Association

*AVA 2022 Census

Food Standards Agency

This industry guide provides the vending industry with practical advice on how to comply with food hygiene legislation and related requirements. The guide is officially recognised by the Food Standards Agency (FSA) which has responsibility for food safety in England, Wales and Northern Ireland, and Food Standards Scotland (FSS) which has responsibility for food safety in Scotland.

Use of this industry guide is optional and food business operators can choose to comply with regulations in other ways. However, where a food business operator is following the guidance in a recognised industry guide, the enforcement authority may take this into account when assessing compliance with legislation.

The information within this guide will help vending businesses meet their legal obligations and ensure food safety. The use of industry guides supports the proportionate, consistent and effective application of food hygiene in the UK and FSA and FSS fully support their development.

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Preface

Vending and dispensing operations incorporate a wide range of equipment.
This *Industry Guide to Good Hygiene Practice* covers businesses that supply, service or replenish the following categories of equipment:

- Ambient and refrigerated vending packaged snacks such as confectionery and crisps
- Temperature-controlled machines vending perishable items such as sandwiches, milk in cartons and plated meals
- Temperature-controlled machines vending individually wrapped ice creams
- Machines vending cans, bottles and cartons
- Machines vending hot chips, pizzas or toasted sandwiches (these products are held frozen and served hot)
- Machines vending frozen food
- Machines vending hot or cold beverages from powdered ingredients or syrups
- Machines vending freshly brewed coffee and leaf tea which may include fresh milk
- Machines vending ice
- Post-mix equipment dispensing remotely through tubing from a container such as bag-in-box.

This guide does not cover the requirements for the following categories of equipment:

- Machines which vend milk into consumers' containers.
- Machines which make and vend candy floss
- Machines which vend orange juice made in the machine from oranges

Introduction

This *industry guide to Good Hygiene Practice* is intended to give advice and guidance to operator companies in the vending and dispensing industries, that is, companies that site, service, clean and replenish machines often on third party sites, on how to comply with their legal obligations in connection with food hygiene.

The laws that underpin food hygiene in the UK are Retained EU law Regulation (EC) 852/2004 (as amended) on the hygiene of foodstuffs and Retained EU law Regulation (EC) 178/2002 (as amended) on general food safety. The text in this guide is intended to apply to all UK jurisdictions unless specific national variations are noted.

For Northern Ireland, references to Retained EU law should be read as meaning EU law. In Northern Ireland, EU food law continues to apply, as agreed in the Northern Ireland protocol. Retained EU law does not apply in these circumstances.

This is an official guide recognised by the Food Standards Agency and Food Standards Scotland in accordance with article 8 of Retained Regulation (EC) 852/2004. You are not legally obliged to follow this guide and may choose other ways to meet the regulations, but you are encouraged to use the guide on a voluntary basis.

Whilst the contents are not legally binding, officers from food authorities must take into account the use of such guides, established in accordance with legislation, when they enforce the Regulations and may use the guide as the basis of a food inspection of your business.

About this guide

Retained Regulation (EC) 852/2004 contains the legal requirements for food businesses (the rules of hygiene) to enable them to produce safe food. It includes three groups of requirements: the requirement to register the business; the basic rules of hygiene which apply to all food businesses; and the requirement for businesses to operate according to a business specific food safety management plan produced according to the internationally recognised HACCP (Hazard Analysis, Critical Control Points) protocol.

Part 1 of this guide provides guidance on how to register the business. All businesses selling any sort of food or drink must be registered with the local authority.

Part 2 provides guidance on the rules of hygiene as identified in the regulation. These are listed in 12 chapters in Annex II of the regulation and include are written for all the aspects of a food business. Because the regulation applies to all food businesses some clauses, such as those that deal with requirements for raw meat, are not relevant to vending and dispensing. Part 2 of this Guide deals with each chapter as it applies to vending and dispensing in turn and for each subject it provides:

- the specific section of the law.
- guidance on how to comply, which outlines actions or arrangements which are considered sufficient to comply.
- additional good practices that businesses may wish to implement. These good practices go beyond what is required to comply with the law.

While the rules of hygiene represent the practices that are basic for all businesses, each business must have its own individual food safety management plan.

Part 3 of the Guide provides guidance on how a vending operator business could carry out the required hazard analysis and produce a food safety management plan to comply with the law.

The guide also contains a series of appendices which provide more detailed guidance on specific aspects of vending and dispensing.

Glossary

Ambient temperature The temperature of the surrounding environment. Commonly used to mean room temperature

Bacteria A group of single-cell living organisms. Some may spoil food and some may cause illness.

Bactericide Literally 'bacteria killer'. In practice, the same as disinfectant.

Best before date Date mark required on longer life foods that are NOT subject to microbiological spoilage. This date mark relates to food quality rather than food safety.

Carrier A person who had been ill with food poisoning and now shows no sign of illness, but may still be carrying food poisoning bacteria in their gut. They are capable of transmitting these bacteria to other people.

Chilled food machine A food vending machine containing a chiller unit that is capable of maintaining the temperature of the foods within it to 5°C or less to permit the storage and sale of high risk foods. It should be noted that the chiller units in such machines do not have sufficient capacity to chill down foods from ambient temperature within an acceptable time to comply with regulations (The Food Safety and Hygiene Regulations (England) 2013 Regulation 32 and Schedule 4 (and similar regulations for Wales and Northern Ireland, and the Food Hygiene (Scotland) Regulations 2006 Schedule 4). Chilled food machines are fitted with a temperature readout and a health safety cut-out.

Cleaning The removal of food residues, dirt, grease, and other undesirable residues.

Cleaning schedule A written document outlining how a piece of equipment is to be cleaned. It will include details of how each part is to be cleaned, the cleaning product to be used, the person responsible for carrying out the cleaning, the standard of cleanliness required, the frequency of cleaning and any health and safety precautions to be taken when handling the cleaning products. All staff should be made aware of their individual responsibilities and a responsible person should check that the cleaning schedule is followed.

Contamination The introduction or occurrence in food of any microbial pathogens, chemicals, foreign matter, spoilage agents, taints, unwanted or diseased matter, which may compromise its safety or wholesomeness.

Control measures The actions to be taken to remove an identified hazard or to reduce it to a safe level.

Critical control points Points at which hazards can be controlled.

Curtilage The point at which mains water enters a building. It is important because the responsibility for water quality changes at this point. From the mains supply to the curtilage is the responsibility of the water supplier but from the curtilage within the building is the responsibility of the owner of the building.

Detergent Material for removing dirt during cleaning. Detergents and soaps differ in their composition but have similar action. They do not destroy micro-organisms.

Disinfection The reduction of microbial contamination to safe levels.

Disinfectant Product which, when used according to instructions, will deliver disinfection. To be able to be sold as a disinfectant, products must be able to reduce the numbers of certain germs by 99.999% in standard test conditions.

Dispensing The delivery by drawing off (which may involve processing, mixing or treating) from storage an open food product intended for immediate consumption.

Food Includes all foods, whether meal components or treats, beverages and water; anything the customer consumes for pleasure or nutrition.

Food poisoning Illness transmitted by food. Caused either by infection or intoxication. Symptoms commonly include diarrhoea or vomiting.

HACCP Hazard Analysis, Critical Control Points. A management tool that gives a structured approach to identification and control of hazards.

Hazard Anything that may cause harm to a person who eats the food.

Food safety cut out A device which automatically prevents food from being dispensed if a device storage or process temperature has an adverse influence on food; for example, for a chilled vending machine, if the internal temperature exceeds that which is safe.

High risk foods Ready to eat foods. These are foods which have gone through most or all of their preparation steps. They will be 'high risk' if these are contaminated or allowed to deteriorate because there are no further preparation steps or appropriate chilled storage to control the hazard. Examples are sandwiches, prepared salads or cook-chill dishes.

Hygiene kit A set of clean exchange components provided by machine manufacturers for use by operators. Existing components which are in contact with both water and product (including mixing bowl and dispensing tubes) are removed from the machine for cleaning and are replaced by those from the hygiene kit.

Induction training Training given to new employees. Includes information on how the employee is to carry out their work hygienically. May be adequate in the short term and may precede more formal training.

Micro-organism Any small living organisms especially bacteria, yeasts, moulds and viruses

Monitoring Regular checks to ensure a system is working properly. The results of monitoring are usually recorded in writing.

Mould A microscopic plant which grows in damp condition and on the surface of food but actually penetrates the food.

Operator company The company employing the food handler who fills and cleans the machine.

Pathogen Any micro-organism that may cause illness.

Pest Any animal life unwelcome in food premises. Especially insects, birds, rats, mice and other rodents capable of contaminating food directly or indirectly.

Post mix systems Those where a liquid concentrate and water are mixed at the point of dispense, usually at a bar.

Potable Usually related to water. Safe to drink and acceptable for use in food preparation.

Python The insulated bundle of plastic tubes which carry concentrates and water to the point of dispense.

Sanitiser A product which cleans and disinfects at the same time.

Stock rotation The practice of making sure that older supplies of food are used before new stock.

Toxin Poisonous substance. May be contamination from external sources or produced by growth of micro-organisms.

Use by date Date mark required on microbiologically perishable pre-packed foods. Under the regulations (Retained Regulation (EC) 1169/2001) it is an offence to sell food after its 'use by' date.

Vending machine Any mechanical, electrical or electronic device designed to deliver a food automatically or by self-service operation.

Virus Microscopic particle which may be transmitted by food and may cause illness. Viruses cannot multiply or grow in food.

Yeasts and moulds Microscopic organisms. Some are desirable in food and are important to its characteristics, for example bread fermentation and the ripening of cheese. Others may spoil food and a few may cause illness.

Part 1
Food premises registration

You must register your business with your local authority and ensure they understand the nature of your business. There is no cost to register the business and registration cannot be refused. Your local authority will advise you on whether there are additional regulations, that are not covered in this guide, that apply to your business.

How to comply with the law

You must register your business with your local authority. Details of how to do this can be found on the FSA website registration page. **https://register.food.gov.uk/new**

You should register at least 28 days before starting to trade.

Vending operators should register the location(s) of their business premises but it is not necessary to register the location of individual machines.

You do not need to be visited by an environmental health officer before starting to trade.

You must inform your local authority if you make any significant changes in your operations. Significant changes in this context would include increasing the range of products vended from ambient stable foods to include chilled foods, or if you decided to store fresh milk for coffee machines on your premises.

You must inform your local authority if you sell or close your business. You must reregister if you move premises from one local authority to another or check the company's registration if you take over a going concern.

Good practice

If you intend to move into distribution of chilled food it is good practice to discuss the implications with your local authority at an early stage, particularly before equipment is purchased or installed..

The law

Article 6 deals with official controls, registration and approval.

Retained Regulation (EC) 852/2004 Article 6(2)

Every food business operator shall notify the appropriate competent authority, in the manner that the latter requires, of each establishment under its control that carries out any of the stages of production, processing and distribution of food, with a view to the registration of each such establishment.
Food business operators shall also ensure that the competent authority always has up-to-date information on establishments, including by notifying any significant change in activities and any closure of an existing establishment.

Part 2
General requirements for food businesses

Article 4.2 of Regulation (EC) No 852/2004 requires that all food business operators carrying out any stage of production, processing and distribution of food after primary production must comply with the general hygiene requirements laid down in Annex II.

Annex II is divided into 12 chapters, each dealing with a specific aspect of a food business. This section of the guide will deal in turn with each of the chapters relevant to vending as described in the Introduction.

This guide does not cover the requirements for food businesses preparing food for vending or catering and does not offer guidance on compliance with Annex II Chapter II of the regulation, which are specifically related to the preparation of food and are covered in the *Catering Guide*. Vending companies which also prepare food should operate the food preparation part of their business according to the guidance in the *Catering Guide.*

Design and layout of buildings

General considerations

These general requirements relate to the premises of the vending operation which include rooms where foods are stored. Subsequent parts of the Regulation refer to the requirements relating to the design and siting of the vending machine.

How to comply with the law

- Locations of food premises must be selected such that air-borne contamination, for example from busy roads or sewage works, is minimised. In premises where air flow is controlled, it must be designed so that contaminated air is not brought into food rooms.
- The layout, design, construction and size of premises must
  - avoid the creation of places that are difficult to clean.
  - be such as to avoid the build-up of condensation
  - allow food storage and other activities to be clearly separated
- Premises must be designed and sited so as to minimise the number of places where pests can hide or breed.
- Surface finishes should be such as to avoid shedding particles such as paint or plaster and should be easy to clean.
- Areas of vending operations in which food is handled or stored should be designed to allow them to be maintained and cleaned so that they are visibly clean.
- Work rooms should be designed and operated so as to allow operations such as machine repair and parts cleaning to be carried out hygienically.
- The internal surfaces (walls and floors) of premises in which food is handled or stored must be kept clean and in a good state of repair.
- The surfaces must be maintained so that they can be cleaned.
- Natural or mechanical ventilation must be provided so that heat and/or humidity cannot build up to levels that could compromise the safety of food. Mechanical ventilation systems must not discharge into rooms where food is stored or handled. Filters and other parts of mechanical ventilation systems that may need maintenance or cleaning must be accessible either directly or through access panels.
- Rooms where foods which must be kept chilled, such as sandwiches, are stored before delivery to the vending machines must have sufficient chilling capacity to ensure the foods are kept at a safe temperature.
- Lighting must be good enough to allow safe handling of food, effective cleaning and monitoring of cleaning standards.
- Drains must have adequate fall to allow all solid or liquid waste to flow away.
- Cleaning chemicals and disinfectants should be stored separately from foods.

Good practice

- When considering a location, take into account the risks of contamination from other premises and weather – related risks such as flooding.
- Make sure there are no nooks and crannies, particularly in rooms where food is stored, which are difficult to clean where dirt can build up or pests could hide.
- Keep areas where food is stored clear and uncluttered.
- Store product on racking positioned so that building surfaces can be cleaned and with sufficient gap above the floor to allow cleaning of the floor.
- Have a maintenance programme that ensures that all surfaces, including light fittings, grilles and windows are regularly cleaned. Dry cleaning by brushing or vacuum cleaning is better than wet cleaning for food storage areas.
- Arrange machine repair facilities so that there is sufficient space to allow food and water contact parts to be stored and handled hygienically.
- The temperature of any room in which chilled foods are stored should be measured and recorded regularly.
- Consider how the temperature of food storage rooms will be managed when the external temperature rises above the melting point of chocolate (around 37°C)
- Cover lights with shatter-proof diffusers or shrouds.
- It is good practice to follow a written procedure for cleaning up after a glass breakage.
- Store stocks of cleaning agents and disinfectants in a separate part of the warehouse from foodstuffs.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter 1

1. Food premises are to be kept clean and maintained in good repair and condition
2. The layout, design, construction, siting and size of food premises are to:
   (a) permit adequate maintenance cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations;
   (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food, and the formation of condensation or undesirable mould on surfaces
   (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control;
   and
   (d) where necessary, provide suitable temperature controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded.
5. There is to be suitable and sufficient means of natural or mechanical ventilation. Mechanical airflow from a contaminated area to a clean area is to be avoided. Ventilation systems are to be so constructed as to enable filters and other parts requiring cleaning or replacement to be readily accessible.
7. Food premises are to have adequate natural and/or artificial lighting.
8. Drainage facilities are to be adequate for the purpose intended. They are to be designed and constructed to avoid the risk of contamination. Where drainage channels are fully or partly open, they are to be so designed as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where foods likely to present a high risk to the final consumer are handled.
10. Cleaning agents and disinfectants are not to be stored in areas where food is handled.

Sanitary arrangements

How to comply with the law

Toilets

- Toilets must be provided.
- The numbers that must be provided are dependent on the number of people on site and are laid down in paragraphs 197 to 202 of the Health and Safety Executive (HSE) Approved Code of Practice L 24 to the Workplace (Health, Safety and Welfare) Regulations 1992 (https://www.hse.gov.uk/pubns/priced/l24.pdf.)
- Toilets must be connected to a drainage system through an effective trap.
- There must be at least an intervening ventilated space between toilets and areas in which food is handled or stored.
- The toilets must be available for use by visiting delivery drivers.

Wash basins

- There must be hygienic methods for handwashing and drying
- Wash basins must be provided close to toilet facilities.
- The numbers of washbasins that must be provided is also laid down in HSE Code of Practice L24.
- Paragraphs 205 and 206 of Code of Practice L24 also provide guidance on the ventilation necessary in toilets and the standard of lighting and cleanliness of toilets and washrooms.

Changing facilities

- Any changing facilities should be of sufficient size to allow for the hygienic changing of clothes and the storage of everyday clothes.

Good practice

- Elbow or remote operated taps are better than hand-operated taps.
- It is best to have a bactericidal soap in a dispenser rather than provide a bar of soap.
- It is not good to have a towel system where the same part can be used twice. Disposable towels or air dryers are better.
- Provide bins with lids for those items that are not suitable for flushing down the toilet.
- Wherever possible, toilets should not be used as changing rooms.
- It is good practice to have signage that encourages hand washing.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter 1

3. An adequate number of flush lavatories are to be available and connected to an effective drainage system. Lavatories are not to open directly into rooms in which food is handled.
4. An adequate number of washbasins is to be available, suitably located, and designed for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the hand-washing facility.
6. Sanitary facilities are to have adequate natural or mechanical ventilation.
7. Food premises are to have adequate natural and/or artificial lighting
9. Where necessary, adequate changing facilities for personnel are to be provided.

Looking after food for vending

How to comply with the law

- The business must be registered with your local authority.
- Food for sale through vending machines must be purchased from suppliers known to be capable of producing safe food.
- Food products and ingredients used in vending must be kept clean and dry to minimise the risk of mould growth or contamination. Storage areas must be kept clean, tidy and well maintained to minimise the risk of foreign body hazards and prevent harbourage of pests.
- Food must be protected from contamination in storage, during distribution and in the vending machine.
- Companies should ensure that pest control measures are in place.
- Domestic animals should not be permitted in the food store.
- Cleaning chemicals including detergents, and oils and lubricants used for machines must be stored separately from foodstuffs.
- Chemicals used for cleaning machines must always be stored in labelled containers intended for the purpose.
- Keep a record of both suppliers and of customers.
- Have a written procedure for the withdrawal of product from machines if the manufacturer issues a withdrawal notice.

Good practice

- It is important to ensure that food for vending machines is safe to eat. However, few vending companies have the technical resources necessary to carry out a meaningful audit of their suppliers, so it is good practice to buy from suppliers who have been audited by reputable third parties. As well as the local environmental health officer this might include auditors from major UK companies or third-party specialist auditors for such companies.
- It is good practice to record a batch code or expiry date of deliveries and to keep these records for 3 years.
- For pre-packed food labelled with a 'use-by' date, product received should have enough residual shelf life to allow the food to be used with in the specified date.
- Part used packs of ingredients should be resealed and stored so as to prevent contamination.
- Packaging and machine parts should be stored separately from food materials in clean and dry stores that are free from pests and other sources of contamination.
- The food store should be clean and dry, and good practice includes storing foods off the floor, keeping floors and walls clean, fitting lights with diffusers to stop broken glass falling onto food or the floor and rotating stock.
- Before placing vending machines, the site should be assessed to ensure that products within the machine will not become damp or contaminated. Temperature controlled food machines should be placed so that they do not receive direct sunlight, which may cause overheating.
- It is good practice to have a contract with a pest control company for the food store.
- Waste should be covered so that it does not attract birds or feral animals.
- Before placing a vending machine, the site should be assessed in order to check that it is unlikely to attract insects, particularly ants or cockroaches.
- While this regulation does allow short periods outside temperature control, the limitations of the chilling system in a chilled food vendor mean that foods need to be at less than 8°C when they are loaded into the machine.
- The shelf life specified by the manufacturer should be followed. The British Sandwich Association recommendation is that the shelf life of sandwiches should be 'the date of production plus two days'.

Looking after food for vending

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter IX1

1. A food business operator is not to accept raw materials or ingredients, other than live animals, or any other material used in processing products, if they are known to be, or might reasonably be expected to be, contaminated with parasites, pathogenic micro-organisms or toxic, decomposed or foreign substances to such an extent that, even after the food business operator had hygienically applied normal sorting and/or preparatory or processing procedures, the final product would be unfit for human consumption
2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.
3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.
4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination).
8. Hazardous and/or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers

Retained Regulation (EC) No.178/2002

Article 18:

1. The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution.
2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures which allow for this information to be made available to the competent authorities on demand.
3. Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand.
4. Food or feed which is placed on the market or is likely to be placed on the market in the Community shall be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions.

Article 19:

1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection.
2. A food business operator responsible for retail or distribution activities which do not affect the packaging, labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, co-operating in the action taken by producers, processors, manufacturers and/or the competent authorities.
3. A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food which it has placed on the market may be injurious to human health. Operators shall inform the competent authorities of the action taken to prevent risks to the final consumer and shall not prevent or discourage any person from cooperating, in accordance with national law and legal practice, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food.
4. Food business operators shall collaborate with the competent authorities on action taken to avoid or reduce risks posed by a food which they supply or have supplied.

Specific requirements for vending machines

Design, construction and siting

How to comply with the law

- Machines should be designed and constructed to avoid angles, recesses and voids that would make them difficult to clean or provide harbourage for pests.
- Food and water contact surfaces should be made of materials that comply with Retained Regulation (EC) 1935/2004 on materials and articles intended to come into contact with food.
- Vending machines should be sited in clean, well-lit areas that are free from pests, particularly rodents and crawling insects.
- Food contact surfaces must be cleaned regularly to avoid the build-up of soil.
- Food and water contact parts in vending machines should be made from suitable materials

Good practice

- The proposed site of the machine should be inspected to ensure it is suitable. The site should be clean, well-lit and free from excessive dust, odours or humidity. It is not appropriate to site machines under open stairs or next to toilets.
- Whilst cleaning the site is the responsibility of the site owner, the vending operator should identify where siting constraints will make cleaning difficult.
- Keep machines away from external doors to minimise the risk of ants tracking to the machine.
- A site survey form should be used to check and record the site details including whether an uneven floor would make it difficult to level the machine on installation.
- It is good practice to provide access for cleaning underneath the machine or to seal the machine to the floor with a gasket.
- When machines are fitted into a housing they should be installed in such a way that they do not provide homes for pests.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter 1

1. Premises and vending machines are, so far as is reasonably practicable, to be so sited, designed, constructed, and kept clean and maintained in good repair and condition as to avoid the risk of contamination, in particular by animals and pests.
2. (b) surfaces in contact with food are to be in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable, corrosion- resistant, and non-toxic materials, unless food business operators can satisfy the competent authority that other materials used are appropriate;


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Specific requirements for vending machines

Cleaning

How to comply with the law

- Food and water contact parts in vending machines should be made from materials that do not transfer their constituents to foods and endanger human health.
- A supply of hot and cold potable water must be available for cleaning machines that vend fresh food or open drinks. Water contact parts of drinks vending machines must be cleaned regularly. See appendix 6 for detailed guidance.
- Drinks vending machines must be connected to a source of potable water. (See also the guidance on water and appendix 3 of this guide for a detailed discussion of the quality of water to be provided to and dispensed from vending machines and water dispensers.)
- Where appropriate, drinks vending machines must be fitted with a waste tray or bucket. It must be possible to dispose of this waste appropriately.
- Spoiled or out-of-date stock must be removed from the machine and site for disposal.
- The manufacturer's instructions for cleaning and the frequency of cleaning must be followed. This is particularly important in the case of machines making and vending milk shakes.

Good practice

- Food contact parts of vending machines should be cleaned regularly according to a schedule. See appendix 6 for more guidance.
- Staff carrying out cleaning should have adequate instruction, supervision, and training to ensure they carry out their task safely and effectively.
- Precautions should be taken during cleaning to avoid contamination with cleaning chemicals.
- The source of hot water for cleaning machine parts should preferably not come from the wash hand basins in thetoilets on site.
- Those cleaning and servicing vending machines should wash their hands or, if this is not possible, use a hygienic wipe before starting work on site.
- Cleaning of food and water contact parts can be done either on site or a removable hygiene kit can be used which enables removable food and water contact parts to be replaced on site and the used parts taken away for cleaning in suitable facilities elsewhere. Parts cleaned on site should be cleaned by brushing in hand-hot potable water with detergent.
- Parts from syrup dispense units should be cleaned by brushing in hand-hot water. **Soaking in either warm water or soda water on its own is inadequate.** Particular attention should be paid to the prevention of cross contamination from other sources, e.g. counter surfaces and equipment such as beer dispensers.
- Parts in contact with food or drink should be replaced when they become crazed or pitted so that they are difficult to clean.
- While the vast majority of food sold through vending machines is prepackaged it is nevertheless good practice that surfaces upon which foods rest are smooth and easy to clean.
- Where activated carbon or ion exchange filters are fitted they should be changed in accordance with the equipment manufacturer's instructions.
- Drinks vending machines should have a cut out to stop the machine working if the waste container is full.
- It is good practice to protect food during the replenishment of a vending machine to avoid the risk of contamination by other personnel on site e.g. by coughing or sneezing

Cleaning

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter II

1. Premises and vending machines are, so far as is reasonably practicable, to be so sited, designed, constructed, and kept clean and maintained in good repair and condition as to avoid the risk of contamination, in particular by animals and pests.
2. In particular, where necessary:
   (a) appropriate facilities are to be available to maintain adequate personal hygiene (including facilities or the hygienic washing and drying of hands, hygienic sanitary arrangements and changing facilities);
   (b) surfaces in contact with food are to be in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable, corrosion- resistant, and non-toxic materials, unless food business operators can satisfy the competent authority that other materials used are appropriate;
   (c) adequate provision is to be made for the cleaning and, where necessary, disinfecting of working utensils and equipment;
   (e) an adequate supply of hot and/or cold potable water is to be available
   (h) foodstuffs are to be so placed as to avoid the risk of contamination so far as is reasonably practicable

Clause 2(d) does not apply to vending
Clause 2(f) is included in the section on food waste
Clause 2(g) is covered in the section on temperature control

Retained Regulation (EC) No. 852/2004 Annex II Chapter V

1. All articles, fittings and equipment with which food comes into contact are to:
   (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;
   (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;
   (c) with the exception of non-returnable containers and packaging, be so constructed, be of such materials and be kept in such good order, repair and condition as to enable them to be kept clean and, where necessary, to be disinfected;

and

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

[*Clauses 2 and 3 are not applicable to vending]

Retained Regulation (EC) No. 1935/2004

3.1 Materials and articles, including active and intelligent materials and articles, shall be manufactured in compliance with good manufacturing practice so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could:
   (a) endanger human health;

or

   (b) bring about an unacceptable change in the composition of the food;

or

   (c) bring about a deterioration in the organoleptic characteristics thereof.

Transport

How to comply with the law

- Vehicles used for transporting foodstuffs to clients' premises must be kept clean inside and out.
- Vehicles, or the compartments within them used for carrying foodstuffs, should be designed so that they can be easily cleaned.
- Certain foods will be covered by temperature control requirements and transport equipment will need to be designed accordingly (see the section on temperature control).
- Non-food materials such as cleaning chemicals and cups may be carried in the same van as foodstuffs provided that they are adequately separated and packaged so there is no risk of contamination of the foodstuffs.
- Out of date foodstuffs and used cups may be returned to base in the van provided that they are in separate sealed containers so that there is no risk to either food safety or taint of the foodstuffs.
- There should be a written procedure covering the cleaning of the van if there is a spillage of non-food material. In the event of such a spillage the van should be cleaned before being used to carry foodstuffs
- Unwrapped foods, such as fruit, must be carried in enclosed containers to prevent contamination either from other materials carried in the vehicle or from dust, dirt and fumes from traffic.

Good practice

- Vehicles used to transport foodstuffs to the company should be checked on arrival to make sure they are clean and hygienic.
- Company vehicles and/or containers should be cleaned on a regular basis.
- Any internal compartments of vehicles should be made of materials that are smooth and without nooks and crannies that are difficult to clean.
- It is good practice to have separate designated containers for food, other supplies and waste.
- It is recommended that strong-smelling products, e.g. air fresheners or some disinfectants, are not carried in vehicles carrying food because of the risk of tainting the food.
- It is good practice to have vehicles fitted out internally specifically for carrying all the necessary supplies for cleaning and replenishing machines to ensure there is no contamination of foodstuffs.
- It is good practice to have containers for waste, either cups or foodstuffs, that can be sealed for transport. Where machinery and components are transported in the same vehicle as food, they should be sealed inside packaging so that they do not contaminate the food.
- It is good practice to ensure that all foodstuffs, with the exception of fruit, are wrapped before being dispatched from the operator's premises.
- It is good practice to transport food in sealed containers that can be secured in position in the van.
- Food-grade plastic or stainless steel receptacles are recommended for the transport of high- risk food such as sandwiches.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter III

2. (g) adequate facilities and/or arrangements for maintaining and monitoring suitable food temperature conditions are to be available;

Retained Regulation (EC) No. 852/2004 Annex II Chapter IV

1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect food stuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection.
2. Receptable in vehicles and /or containers are not to be used for transporting anything other than food stuffs where this may result in contamination.
3. Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs are the same time, there is, where necessary, to be effective separation of products.
5. Where conveyances and /or containers have been used for transporting anything other than foodstuffs, or for transporting different foodstuffs, there is to be effective cleaning between loads to avoid the risk of contamination.
6. Foodstuffs in conveyances and/or containers are to be so placed and protected as to minimise the risk of contamination.

*[*Clause 4 on the transport of bulk foodstuffs does not apply to vending.]

Food waste

How to comply with the law

- Food vending machines must be checked regularly to ensure food is removed from the machine before its shelf life expires. Foods past their 'use-by' date must not be offered for sale. They should be removed from the site as soon as possible.
- Ambient stable food past its 'best before' date may be consumed but food past its "use by" date should not be consumed.
- The contents of any liquid waste bucket in a drink vending machine must be emptied during routine cleaning
- Food past its 'use-by' date, damaged food and food waste should be placed in a closable container for transport from the site to ensure it does not contaminate other foods.
- Food waste containers at the operator's premises should be secure and sealed to prevent access by animals and birds.
- Chilled foods, such as sandwiches past their 'use-by' date, are considered as 'former foodstuffs', and are classified as Category 3 (low risk) products in the Animal By-Products Regulations 2005. They should be disposed of by a licenced waste handling company.
- Operator companies carrying waste such as cups, packaging and foods from site to base should apply for a waste carriers' licence at **https://www.gov.uk/register-renew-waste-carrier-broker-dealer-england**

Good practice

- It is not good practice to merely leave food past its 'use-by' date in a waste bin; it should be removed from site.
- It is good practice to clean the waste bucket of a drinks vending machine before replacing it and to place an odourless/food safe sanitising agent in it at the end of the cleaning process.
- It is good practice to ensure that waste receptacles are lined with plastic liners that can easily be removed and secured so that the minimum of food waste comes into contact with the container.
- It is good practice to ensure that all food waste placed in an outdoor receptacle is securely bagged up.
- Outdoor waste receptacles should be cleaned on a regular basis.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter III

2. (f) adequate arrangements and/or facilities for the hygienic storage and disposal of hazardous and/or inedible substances and waste (whether liquid or solid) are to be available;

Retained Regulation (EC) No. 852/2004 Annex II Chapter VI

1. Food waste, non-edible by-products, and other refuse are to be removed from rooms where food is present as quickly as possible, so as to avoid their accumulation

2. Food waste, non-edible by-products, and other refuse are to be deposited in closable containers, unless food business operators can demonstrate to the competent authority that other types of containers or evacuation systems used are appropriate. |These containers are to be of an appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect.

3. Adequate provision is to be made for the storage and disposal of food waste, non-edible by-products, and other refuse. Refuse stores are to be designed and managed in such a way as to enable them to be kept clean and, where necessary, free of animals and pests.

4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to the effect, and is not to constitute a direct or indirect source of contamination

Water supply

How to comply with the law

- Potable water is water that is safe to drink. This will normally be water taken from a direct connection to the mains system. Possible other sources of water include tanks, bore holes and water bottles. Where there is any doubt that these or other sources of water are potable, they must be checked before vending machines are connected to them. Vending machines must not be connected to mains lines that are used for firefighting.
- All water contact parts of drinks machines must be made of materials that will not contaminate the water.
- Potable water must be used wherever water is needed for testing machines, washing food or water contact parts of drinks machines, and for hand washing.
- Ice for drinks should only be made from potable water. Ice making machines should be cleaned regularly according to the manufacturer's instructions.
- Non-potable water or other fluids can be used in sealed eutectic plates that are used for cooling foods provided there is no direct contact between the liquid and the food.

Good practice

- It is good practice to carry out a site survey before installing a drinks vending machine and to ensure that the water supply is mains water.
- In a case where the operator is asked to connect to any other supply, such as a tank, borehole or private water supply, it would be good practice to seek advice from the local Environmental Health Department.
- When installing a drinks vending machine it is good practice to ensure that there are no
  - dead legs
  - long runs of pipe with low or intermittent flow, and to avoid
  - runs of pipe which pass through roof spaces above lights where the temperature may rise above 25°C. upstream of the machine as these can give rise to a deterioration of water quality.
- Some buildings still have lead piping for mains water supplies. The limits for lead in water are very low. While it is not forbidden to connect to lead piping if the water complies with the quality standards, it is not good practice and both the Vending and Automated Retail Association (AVA) and the British Soft Drinks Association (BSDA) recommend that connection is not made to systems that include lead piping.
- Water conditioning devices, such as carbon filters, ion exchange units and UV lights may be used but care must be taken to comply with the manufacturer's instructions in fitting and changing.
- Where the water source is within the vending machine, e.g. a water bottle, it is good practice to ensure that it is:
  - securely covered to prevent insect ingress or airborne contamination
  - readily accessible and removable for inspection and cleaning
  - designed to keep the water below 25°C

Further detailed advice on water issues is provided in Appendix 3 of this guide.
The mains water supply will, on rare occasions, become contaminated. Advice on what to do in this event is provided in Appendix 5 of this guide.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter VII

1(a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated;
(b) Clean water may be used with whole fishery products. Clean seawater may be used with live bivalve molluscs, echinoderms, tunicates and marine gastropods; clean water may also be used for external washing. When such water is used, adequate facilities are to be available for its supply.
2. Where non-potable water is used, for example for fire control, steam production, refrigeration, and other similar processes, it is to circulate in a separate duly identified system. Non-potable water is not to connect with, or allow reflux into, potable water systems.
3. Recycled water used in processing or as an ingredient is not to present a risk of contamination. It is to be of the same standard as potable water, unless the competent authority is satisfied that the quality of water cannot affect the wholesomeness of the foodstuff in its finished form.
4. Ice which comes into contact with food or which may contaminate food is to be made from potable water or, when used to chill whole fishery products, clean water. It is to be made, handled and stored under conditions that protect it from contamination.

[*Clauses 1(b), 5 and 6 do not apply to vending]

Personal hygiene

How to comply with the law

- Operators and engineers should have completed basic food hygiene training. For more information see the section on Training
- Operators and engineers in a vending business should be clean and tidy and wear a clean uniform or tabard.
- Operators and engineers suffering from an illness that causes open sores or diarrhoea must not work on vending machines.

Some causes of gastroenteritis, such as the norovirus, are very contagious and the guidance given by the UK Health Security Agency is that those who handle unwrapped food should not work while they have symptoms of gastroenteritis and should not return to work until 48 hours after they have recovered and their symptoms have ceased.
Operators who clean drinks vending machines handle the water contact parts of the machine including the mixing bowls and nozzle. If they contaminate these parts then those who consume the drink could fall ill.
The guidance on food handlers thus applies to them and they should not work while they have gastroenteritis and for 48 hours after their symptoms have ceased. For some illnesses such as VTEC E coli., Typhoid, Paratyphoid, Shigella species and Hepatitis A, food handlers should obtain clearance from medical personnel before returning to work.

Good practice

- The high standards of cleanliness required include:
  - having short nails
  - not wearing nail varnish or nail extensions
  - having clean hair tied back
  - washing hands on entering a site
  - wearing highly coloured wound dressing where necessary
  - not wearing jewellery with the exception of a wedding band
- It is good practice for companies to have a sickness policy that is explained to staff on joining that requires them to tell their manager or supervisor if they suffer from an illness causing sores or diarrhoea.
- In case of serious illness it is good practice for the company to contact a medical practitioner for advice on the possible exclusion of a staff member from their normal duties and on their suitability to return after illness. Further advice is provided in Appendix I of this guide.

The law

Retained Regulation (EC) No. 852/2004 Annex II Chapter VII

1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean, and where necessary, protective clothing.
2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness and symptoms, and if possible, the causes, to the food business operator.

Chilled and frozen food

This section covers product held chilled or frozen for reasons of food safety and provides detailed advice on how to comply with the Food Safety and Hygiene (England) Regulations 2013 Regulation 32 and Schedule 4, similar regulations for Wales and Northern Ireland & the Food Hygiene (Scotland) Regulations 2006 Schedule 4. At the time of writing we are not aware of any vending machines that keep food hot.

Most of the food sold through vending machines will have a sufficiently low moisture content or high acidity, or be processed in its package, so that it is stable throughout its shelf life and the package will carry a 'best before' date.

This section relates to products which are known as high-risk foods as they could support the growth of pathogenic (food poisoning) bacteria if stored badly. These products will typically carry a 'use by' date and be found in the chiller cabinet of a supermarket.

They include:

- sandwiches,
- wraps
- filled rolls
- baguettes
- pasta and salads
- pies
- pasties
- prepackaged smoothies

Containing:

- cooked meat
- soft cheese
- canned or smoked fish or
- fresh vegetables with mayonnaise.

Bacteria need warmth to live and multiply. Generally, at temperatures of 5°C or less their growth is inhibited and at 63°C or over most are killed. The range between these two temperatures is known as the danger zone where bacteria will grow rapidly and therefore it is necessary to avoid keeping high-risk foods at these temperatures.

The control of temperature is thus essential in restricting the growth of bacteria and minimising the risk of food poisoning and the deterioration and spoilage of food. For high-risk foods in particular, keeping them chilled or hot is the single most important control in ensuring their safety although it should be noted that *Listeria.monocytogenes* can grow at temperatures as low as -2°C.

This guide provides good practice guidance on the specific aspects of vending chilled food. Food business operators producing chilled food should refer to the Catering Guide.

How to comply with the law

To comply with the law in England chilled foods need to be chilled rapidly after being prepared and kept at less than 8°C throughout their entire life. To comply with the law in Scotland chilled foods must be kept in an appropriately cold place.

Good practice

- While the regulations only require chilled foods to be kept below 8°C it is good practice to keep them at 5°C or less during their entire shelf life.
- It is good practice when selecting a supplier of chilled foods to check that they can prepare the foods according to the guidance from the Chilled Food Association and chill them rapidly down to 5°C before transport. It is not adequate to rely on the cooling system in a delivery vehicle to cool the foods. The cooling system only needs to maintain the temperature, but there must be sufficient capacity to keep the foods below 5°C even in mid summer.
- **It is important that the chilled food supplier does not use frozen vegetables in ready to eat food unless they are cooked (70°C/2 minutes minimum) to destroy *Listeria monocytogenes*.**
- It is good practice to check the temperature of chilled foods on receipt by the vending operator company and to reject any deliveries where the temperature is above 5°C.
- It is important to note that chilled food vending machines are not designed to chill food rapidly from ambient temperatures to less than 5°C and it is good practice to ensure that all foods put into a machine are at a maximum of 5°C before being loaded into the machine.
- It is good practice to check the relationship between the displayed temperature on a chilled food vending machine and the actual temperature of the products. This should be done after a delay of 2 hours after loading the machine as the air temperature in the machine will rise slightly during and after loading.
- It is good practice to check the procedures and equipment used to transport foods to the vending machine to ensure that they are adequate to prevent the temperature of the food rising above 5°C at any point in its journey, including that from the delivery vehicle to the vending machine.
- It is important to be aware that the temperatures required by the regulations refer to the temperature of the food itself. In vending it is often more practical for routine checks to measure the temperature of the air rather than that of the food product and it is essential that the relationship between the two is understood and periodically checked.
- When directly measuring the temperature of the food with a probe thermometer, the probe should be disinfected between each reading. The reading should be compared with between pack readings of the same product.
- It is good practice to keep written records of the readings and to monitor records to identify any potential problems.
- It is good practice to site chilled food vending machines out of direct sunlight where the temperature may rise unacceptably during bright sunshine.

The law

Retained Regulation (EC) 852/2004 Annex II Chapter IV

7. Where necessary, conveyances and/or containers used for transporting foodstuffs are to be capable of maintaining foodstuffs at appropriate temperatures and allow those temperatures to be monitored.

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

5. Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted. However, limited periods out of temperature control are permitted, to accommodate the practicalities of handling during preparation, transport, storage, display and service of food, provided that it does not result in a risk to health. Food businesses manufacturing, handling and wrapping processed foodstuffs are to have suitable rooms, large enough for the separate storage of raw materials from processed materials & sufficient separate refrigerated storage.
6. Where foodstuffs are to be held or served at chilled temperatures they are to be cooled as quickly as possible following the heat-processing stage, or final preparation stage if no heat process is applied, to a temperature which does not result in a risk to health.
7. The thawing of foodstuffs is to be undertaken in such a way as to minimise the risk of growth of pathogenic microorganisms or the formation of toxins in the foods. During thawing, foods are to be subjected to temperatures that would not result in a risk to health. Where run-off liquid from the thawing process may present a risk to health it is to be adequately drained. Following thawing, food is to be handled in a such a manner as to minimise the risk of growth of pathogenic microorganisms of the formations of toxins.

Food Safety and Hygiene (England) Regulations 2013 Regulation 32 and Schedule 4

Only those sections of the Food Safety and Hygiene (England) Regulations 2013 Schedule 4, similar regulations for Wales and Northern Ireland and the Food Hygiene (Scotland) Regulation 2006 Schedule 4 that apply to vending are included below.

2.-(1) Subject to sub-paragraph (2) and paragraph 3, any person who keeps and food –
(a) which is likely to support the growth of pathogenic micro-organisms or the formation of toxins; and
(b) with respect to which any commercial operation is being carried out, at or in food premises at a temperature above 8°C shall be guilty of an offence.
[Sub-paragraphs (2) and (3) refer to food sold by mail order]

3. Sub-paragraph (1) shall not apply in relation to –
(a) This sub-paragraph refers to food which is held hot for service
(b) food which, for the duration of its shelf life, may be kept at ambient temperatures with no risk to health;
(c) Food which is being or has been subjected to a process such as dehydration or canning intended to prevent the growth of pathogenic micro-organisms at ambient temperatures, but not where –
(i) after or by virtue of that process the food was contained in a hermetically sealed container, and
(ii) that container has been opened.

5.-(1) In any proceedings for an offence consisting of a contravention of sub–paragraph (1) of paragraph 2, it shall be a defence for the accused to prove that the food —
(a) was for service or on display for sale;
(b) had not previously been kept for service or on display for sale at a temperature above 8°C or, where a recommendation has been made pursuant to sub–paragraph (1) of paragraph 4, the recommended temperature; and
(c) had been kept for service or on display for sale for a period of less than four hours.
(2) In any proceedings for an offence consisting of a contravention of sub–paragraph (1) of paragraph 2, it shall be a defence for the accused to prove that the food —
(a) was being transferred —
(i) from premises at which the food was going to be kept at or below 8°C or in appropriate circumstances the recommended temperature to a vehicle used for the purposes of a food business, or
ii) to such premises from such a vehicle;

Food Hygiene (Scotland) Regulation 2006 Schedule 4

2. —(1) Subject to sub-paragraph (2), any person who keeps food with respect to which any commercial operation is being carried out at or in food premises otherwise than–
(a) in a refrigerator or refrigerating chamber or in a cool ventilated place; or
(b) at a temperature above 63°C,
is guilty of an offence.
(2) Sub-paragraph (1) shall not apply to any food –
(e) which, for the duration of its shelf life, may be kept at ambient temperatures with no risk to health

Training

How to comply with the law

A food handler is any person who handles or prepares food, including drink or ice, whether open (unwrapped) or packaged.

With the exception of fruit, all vended food is packaged.

All food handlers in the vending industry should have a basic understanding of food and personal hygiene before starting work. This could be provided by a short course of around an hour at level 1. Special arrangements may have to be made for persons whose first language is not English and/or persons with literacy or learning difficulties.

The essentials of food and personal hygiene for vending are:

- keep yourself clean and wear clean clothing.
- always wash your hands thoroughly after using the toilet, after every break, and before starting work on a site.
- do not smoke or eat when handling food or cleaning machines.
- keep chilled foods chilled.
- ensure cuts and sores are covered with a waterproof and high visibility dressing.
- tell your supervisor before starting work if you are suffering from sickness or diarrhoea, fever or an infected wound.

It is good practice for others associated with the installation and maintenance of vending machines to receive similar basic hygiene training.

Supervisors should have training on hygiene awareness. A typical course would last 6 hours at level 2 and would include

- sources of harmful bacteria and their potential to cause illness.
- cleaning and disinfection – materials, methods and storage of materials.
- personal health and hygiene, including reporting illness.
- cross contamination – causes and prevention.
- the chill chain including protection of food from contamination.
- pest awareness and action to be taken.

Those preparing or handling unwrapped food should consult the Catering Guide for guidance on levels of training.

Those responsible for the development of the food safety management plan based on the principles of HACCP should have received adequate training in the application of HACCP principles.
This would include an introduction to

- the background to the HACCP system
- the outline of the HACCP system
- good manufacturing practice
- physical, chemical and microbiological hazards
- critical control points
- the steps of the vending process

Training plan and records

It is good practice for a business to have training records to identify the training undertaken by each member of staff. Refresher or update training may be necessary at intervals. This training could take account of any changes in the business, including changes in types of sites, types of machines and new types of products.

It is good practice for training to be delivered by people who themselves have been trained in the skills needed for training.

The law

Retained Regulation (EC) 852/2004 Annex II Chapter XII

Food business operators are to ensure:

1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity;
2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles; and
3. compliance with any requirements of national law concerning training programmes for persons working in certain food sectors

Part 3
Food Safety Management

Modern food safety management is based on a systematic approach to food safety; the principles of identifying the hazards to food safety within a food business, identifying the steps in the process where these hazards can be controlled and taking the actions necessary to manage them. This process is known as HACCP – Hazard Analysis, Critical Control Points.
The process may seem complex but it is relatively straightforward and requires looking at the operation step by step to assess what controls are necessary to keep food safe. Many of these will be simple commonsense practices that have been used for years. The benefit of the HACCP system is that food safety is considered at every step of the business in a systematic fashion. It is important to understand that HACCP is a process that should be carried out in a business already operating within the requirements of the rules of hygiene outlined in Part 2.

Retained Regulation (EC) 852/2004 Article 5

Hazard analysis and critical control points

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

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

The Law	How to comply with the law
(a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels; (b) identifying the critical control points at the step or	A hazard is anything that could cause harm to the consumer. There are three main hazards that may arise with food or drink from vending machines. These are contamination by: bacteria or other micro-organisms that cause food poisoning chemicals, for example, cleaning materials or pest baits, foreign materials such as glass, metal or plastic
steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels; (c) establishing critical limits at critical control points	Within vending, food passes through many steps; delivery, storage, transport, filling and dispensing. Hazards can arise at any step. Critical control points are steps at which hazards must be eliminated or reduced to acceptable levels. With ambient-stable foods or ingredients the most important control is the selection of the supplier. As outlined in the section on temperature control, when vending food which must be kept chilled, such as sandwiches and plated meals, all steps are critical control points in regard to temperature.
which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards; (d) establishing and implementing effective	A critical limit is a measure which must not be exceeded if the food is to remain safe. The critical limit for chilled food, as outlined in the section on temperature control is 5ºC during its shelf life.
monitoring procedures at critical control points; (e) establishing corrective actions when monitoring	Temperatures must be monitored at critical control points to ensure that the limit is not exceeded. Vending businesses must establish ways of monitoring temperatures to reassure themselves that the limit is not exceeded.

indicates that a critical control point is not under control; (f) establishing procedures, which shall be carried out	It is important to establish in advance what actions should be taken if critical limits were to be exceeded. Such actions may include disposing of food that has been exposed to unsafe temperatures.
regularly, to verify that the measures outlined in subparagraphs (a) to (e) are working effectively; and	It is not sufficient to just set up the procedures. It is important to have a regular regime of checks to ensure that they continue to be effective.
(g) establishing documents and records	
commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f). When any modification is made in the product,	Sufficient records should be kept so that compliance with the regulations may be demonstrated. The principle is that of 'as little as possible and as much as necessary'.
process, or any step, food business operators shall review the procedures and make the necessary changes to it. 5.4 Food business operators shall:	It is important that the food safety management system is reviewed when changes are made. This would include changes to the range of products, to the type of vending machine or new clients with more vulnerable consumers such as the elderly people or those with an impaired immune system.
(a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business; (b) ensure that any documents describing the	The up-to-date results of the procedure referred to in paragraph 1 must be available for inspection by an Environmental Health Officer as required. Charts such as the examples of generalised Food Safety Management Studies which follow will suffice when accompanied by supporting documents as appropriate.
procedures developed in accordance with this Article are up-to-date at all times; (c) retain any other documents and records for an appropriate period.	For businesses vending food that needs to be kept chilled for safety, it is important to keep documentary evidence that critical control points are being monitored, such as temperature records from delivery vehicles and vending machines. These should be retained for at least 6 months..

Example food safety management plans

The process of operating vending machines can be separated into three categories for food safety purposes. These are listed below. Typical food safety management studies based on HACCP principles follow, to cover each category.

It should be noted that there are no critical control points for category A and B foodstuffs. All controls are those of good manufacturing practice as outlines in the sections on the rules of hygiene.

Safety Category	Products
A. Prepacked shelf stable foods/drinks (ready for use)	Cans, bottles Confectionery Bagged snacks: Potato crisps, extruded snacks Ambient stable bakery products: biscuits, flapjacks, etc. Fruit: apples, bananas
B. Drinks	Hot drinks made from powders: coffee, tea, hot chocolate cappuccino, soups Cold drinks, carbonated or still, ice cubes
C. Foods that must be kept chilled or frozen	Sandwiches: made with meat, salads etc. Salads: with meat, cheese, eggs etc. Frozen foods for reheating

It is important to note that certain foods, such as soft cheeses, must comply with microbiological criteria contained in Regulation 2073/2005.
Guidance on this regulation is available on the Food Standards Agency's website **www.food.gov.uk**

Examples of generalised Food Safety Management Studies

(These will need to be adapted for individual business/ circumstances)

Category A:
Pre-packed shelf stable foods/drinks, ready for use

Process Step	Hazards	Controls	Monitoring	Corrective Action
Purchase of products	Presence of micro-organisms, toxins or foreign matter	Buy from reputable supplier	Check supplier has accreditation from reputable audit organisation	Warn or change supplier
Delivery to warehouse	Presence of foreign materials	Visual check of delivery vehicle	Delivery record check	Reject delivery
Storage in warehouse	Pest infestation	Pest control in place	Pest control contract	Reject product Review with contractor
Transport to vending machine	Presence of foreign materials	Vans cleaned to schedule	Cleaning record	Reject product Review with driver
Filling and cleaning machine	Chemical contamination	No cleaning chemicals used on food surfaces	Written work procedures	Reject product Retrain operator
Storage and dispensing	Pest contamination	Machine sited to minimise pest infestation	Completed site survey form in file	Reject product Clean machine

Category B:
Drinks made from powders or syrups

Process Step	Hazards	Controls	Monitoring	Corrective Action
Purchase of products	Presence of micro-organisms, toxins or foreign matter	Buy from reputable supplier	Check supplier has accreditation from reputable audit organisation	Warn or change supplier
Delivery to warehouse	Presence of foreign materials	Visual check of delivery vehicle	Delivery record check	Reject delivery
Storage in warehouse	Pest infestation	Pest control in place FIFO in the warehouse	Pest control contract Warehouse check	Reject product Review with contractor
Transport to vending machine	Presence of foreign materials	Vans cleaned to schedule	Cleaning record	Reject product Review with driver
Filling and cleaning machine	Microbiological growth in machine	Operator trained to clean properly & with sufficient frequency	Operators audited	Retrain operator Clean machine
Storage and dispensing	Microbiological contamination of water	Connect to a source of drinking water	Site survey form ensures water source is drinking water	Disconnect machine

Category C:
Foods that must be kept chilled or frozen

Process Step	Hazards	Control Measures	CCP	Monitoring	Corrective Action
Purchase of products	Chemical, Physical, microbiological & undeclared allergens	Buy from audited supplier * Refer to notes at the bottom of this page	Yes	Check supplier has accreditation from reputable audit organisation	Warn or change supplier
Transport to Vending Company	Microbiological growth during transport	Temperature controlled transport	Yes	Delivery record check	Reject delivery
Receipt and Storage	Microbiological growth during storage	Temperature controlled storage	Yes	Pest control contract	Reject product Review with contractor
Transport to vending machine	Microbiological growth during transport	Products transported in chilled containers	Yes	Cleaning record	Reject product Review with driver
Filling and cleaning machine	Microbiological growth in product outside shelf life	Working practices require product to be removed before shelf life expires	Yes	Written work procedures	Reject product Retrain operator
Storage and dispensing	Microbiological growth if machine temperature is not controlled below legal limit	Temperature display Machine stops vending when temperature is above permitted limit.	Yes	Completed site survey form in file	Reject product Clean machine

* Where the vending machine is installed in an environment, such as a hospital, where product may be consumed by people who are more vulnerable to foodborne pathogens such as Listeria monocytogenes, the operator should consider carefully whether more stringent controls are required or whether certain foodstuffs should be sold at all.

APPENDIX 1

Advice on fitness to work

Operators who clean and refill vending machines have the potential to contaminate the machine and its contents if they do not follow good hygiene practices. This is particularly true when they are suffering from stomach upsets, diarrhoea or vomiting.

Retained Regulation (EC) No. 852/2004 Annex II Chapter VIII, Article 2 states:

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

Some causes of gastroenteritis, such as the norovirus, are very contagious and the guidance given by the UK Health Security Agency is that those who handle unwrapped food should not work while they have symptoms of gastroenteritis and should not return to work until 48 hours after they have recovered and their symptoms have ceased. Operators who clean vending machines are handling the water contact parts of the machine including the mixing bowls and nozzle. If they contaminate these parts then those who consume the drink could fall ill. The guidance on food handlers thus applies to them and they should not work while they have gastroenteritis and for 48 hours after their symptoms have ceased. For some illnesses such as VTEC E coli., Typhoid, Paratyphoid, Shigella species and Hepatitis A, food handlers should obtain clearance from medical personnel before returning to work.

Whatever the cause of the illness, good adherence to personal hygiene, especially hand washing, is very important in preventing further illness or illness to others.
Operator training should reinforce the need good hygiene practices and should emphasise that those in the food industry suffering from gastroenteritis must report this to their manager.

APPENDIX 2

Pre-employment medical questionnaire

Questions to be asked of a candidate for a job as a food handler

1. Have you now, or have you over the last seven days, suffered from diarrhoea and/or vomiting?

2. At present, are you suffering from:
   a) skin trouble affecting hands, arms or face?
   b) boils, styes or septic fingers?
   c) discharge from eye, ear or gums/mouth?

3. Do you suffer from:
   a) recurring skin or ear infection?
   b) a recurring bowel disorder?

4. Have you ever had, or are you known to be a carrier of, typhoid or paratyphoid?

5. In the last 21 days have you been in contact with anyone, at home or abroad, who may have been suffering from typhoid or paratyphoid?

If the answer to any question is yes, the individual should not be employed as a food handler until medical advice has been obtained

APPENDIX 3

Water

Mains water

Water is a major ingredient in drinks from beverage vending machines. The quality of water supplied to and from vending machines is, therefore, of paramount importance.

The quality of water provided to buildings is specified by Directive 2020/2184EC on the quality of water intended for human consumption, which is implemented in England by The Water Supply (Water Quality) Regulations 2016 as amended, in Wales by the Water Supply (Water Quality) Regulations 2018 (Wales) and in Scotland by the Public Water Supplies (Scotland) Regulations 2014. These regulations require that water provided for human consumption must be wholesome. They define water which is wholesome and clean as that which:

> is free from any micro-organism and parasite and from any substance which, in value or concentration, constitutes a potential danger to human health;
>
> complies with standards laid out in Schedule I parts A and B, which lists a large number of potential chemical contaminants and two microbiological ones. The microbiological contaminants identified in the schedule are Escherichia coli (E. coli) and Enterococci species, both of which are required to be absent in a 100ml sample.

Schedule 2 provides a further list of 'indicator parameters', which includes coliform bacteria and colony count at 22ºC. Monitoring of a public supply has to include these as indications of the quality of the supply and the integrity of the mains supply network. Coliforms should be absent in a 100ml sample and there should be no abnormal change in the colony count.

The regulations specify that the point at which compliance is determined is the consumer's tap. Water supply companies in England, Wales and Scotland take many thousands of samples each year for analysis and, while they are not responsible for the condition of the supply system within buildings, they must report on this if samples they take are found to fall below the standard and this is documented in the Chief Inspector's Annual Report for drinking water in each devolved nation.

Microbiological Testing of Water from Vending Machines

Testing of water from vending machines for compliance with the regulations would include tests for E. coli, coliforms and colony count. The importance of the testing for measuring the quality and safety of the water and the adequacy of the cleaning of a vending or dispensing unit will be outlined below.

The standards for vending machines are essentially those of the regulations. However, it is important to note that while the regulations define water which is wholesome, samples which give results above those in the regulations do not necessarily imply that the water is unsafe to drink.

Aerobic Heterotrophic Colony Count

The Aerobic Colony Count (also reported as Total Viable Count (TVC) or simply colony count) at a given temperature only represents the bacteria and fungi which are able to grow at the set temperature in the culture media under an aerobic environment. This is likely to represent only a small proportion of the total number of microorganisms present in the sample. The count is reported as colony forming units (cfu) in a given weight or volume of sample. Tests are carried out at 22ºC and it is because there is no evidence on the harmful nature of the general bacterial population that grows at either of these temperatures that limits have not been set for these parameters. The regulations specify no abnormal change in this parameter. Seasonal changes are normal but an abnormal change could indicate a disturbance within the distribution system. Individual readings must be reviewed in the light of earlier readings.

The microbial count at 22ºC in UK mains water arriving at a premises is usually less than 100 cfu per ml. However, a number of factors could adversely affect the count in water depending on the storage and distribution system within the building. Low usage of water, allowing a long residence time in the pipe, high temperature, dead legs, and storage tanks will all tend to increase the count. Microbial growth will also continue inside a vending machine. Levels of 105cfu per ml (10,000 per ml) in water from a vending machine are not uncommon. However, if levels above 105cfu are found it would be good practice to sample from the stopcock and the end of the inlet hose to identify where growth might be occurring.

Coliforms

Detection after cleaning or initial levels of coliforms greater than 103cfu per 100ml are both unusual and the remedial action should be taken (see Appendix IVappendix 4). Regular detection of coliforms in a machine or group of machines cleaned by a particular operator would suggest the need for a review of the cleaning procedures and operator training. As with all measures of indicator bacteria (rather than specific pathogens), the importance is not so much in the individual result, but in the result set in context with other results. Paragraph 6.25(iv) of the DWI guidance on the Regulations makes it clear that lowand previous results. Low numbers of coliforms (in the absence of other faecal indicators) do not represent a risk to health, but indicate further investigations are necessary. It should be noted that it would be highly unlikely that the presence of these bacteria would result in ill health of those who have been consuming the water.

The presence of E. coli in 100ml of sample water would be very unusual and should be investigated. The cause is usually contamination of the dispense point, but might be because of ingress of contamination at other points in the system. The first action would be thorough cleaning or replacement of the dispense point. It would be good practice to check that this cleaning had been effective.

Pseudomonas aeruginosa

Pseudomonas species are frequently present in the mains water, but at such low levels that they may not be detected in routine samples. However, they grow in cold water systems. It is not uncommon to detect Pseudomonas in the water from a vending machine. There is one report in the literature that if large numbers are allowed to grow within drinks vending machines, they may affect quality and may cause an adverse taste. In the unlikely event of such an occurrence the procedure would be to isolate the machine from the water supply and replace or thoroughly clean the cold-water tubing.

Pseudomonas aeruginosa is recognised as an opportunist pathogen in wounds but there is no evidence that Pseudomonas aeruginosa is harmful when ingested and it is for this reason that there are no agreed standards for this bacterium in mains water.

Cryptosporidium

Cryptosporidium is a protozoan parasite that can occur in water and gives rise to symptoms similar to food poisoning. Normal filters will not remove this parasite from the water supply. The presence of cryptosporidium at levels that pose a risk to health would give rise to a "Boil Water Notice". (See Appendix 4)

Filters

Activated carbon filters are often used to improve the taste of water by removing organic materials and halogens (often chlorine), which are initially introduced into the water supply to control bacterial growth. Ion exchange units are used to remove calcium, partly to decrease scale build-up on hot water tanks and partly to improve the appearance and taste of tea. Both these units provide sites for bacterial growth. Sometimes activated carbon is treated with silver to inhibit growth but this is not always effective. The management of these units is important, and they should be maintained and changed in line with the manufacturer's recommendations. Their presence should be taken into account when sanitising machines and tubing.

Contamination of mains water supplies

Should the mains water supply become contaminated, the water supply company will generally make consumers aware through the media. If the source of contamination is microbiological, a 'Boil Water Notice' is usually issued. Detailed advice on the action to take in these circumstances is provided in appendix 5.

Occasionally water supplies are subject to chemical contamination which, if sufficiently serious will result in the water supply company advising consumers not to use water for drinking and cooking. In these cases it is likely that all machines will need to be taken out of service. Once the water supply company has resolved the problem the machine should, as a minimum, be thoroughly flushed with mains water, cleaned with a sanitising solution and then thoroughly flushed again using mains water. Further advice may be issued by the water supply company.

Legionnaires disease

Since Legionnaires disease has a connection with water, some users of vending machines have asked for the dispensed water to be tested on a regular basis for the presence of legionella bacteria. Most testing for hazardous substances is based on an estimate of the risk of the substance being present and its potential for causing harm. In the case of legionella, the bacterium is widely distributed in the environment and may, on very rare occasions, be present in low numbers in the water supply. However, its mode of transmission is through the inhalation of droplets of contaminated water. Thus, in the case of a hot-drinks vending machine, the heat would kill any legionella bacteria present. Where cold water is dispensed, even if carbonated, the temperature would need to be above 20ºC to allow growth of the organism. The chances of this occurring are considered to be so small as to be negligible and the routine sampling of water from vending machines to detect the presence of *legionella* bacteria is not recommended.

Immunocompromised people

It has been recommended by a working group of experts that certain immunocompromised people should boil and cool their drinking water whatever its source including tap and bottled water. They should also use boiled, cooled water to make ice cubes.*

It is recommended that within hospitals machines are not sited in ward areas with patients at particular risk from environmental bacteria, these would include wards such as intensive care, neonatal, AIDS and transplant units.

**Cryptosporidium in water and the immunocompromised, CDR weekly, vol 9. No.33 of 13 August 1999.*

APPENDIX 4

Microbiological standards for samples of dispensed water from drink dispense systems

As outlined in Appendix 3 a single result of an Aerobic Colony Count test reflects neither the hygienic practices of operators nor the safety of the water. However, the results from a coliform test reflect the efficiency of cleaning of the dispense nozzle and it has been found useful to provide specific guidance on the actions to be taken in the light of results. It is worth reiterating here that simply putting the nozzle of a soft drink dispense gun in soda water overnight has no beneficial effect whatever.

The criteria below were agreed by representatives of Public Health England and the Port of London Health Authority as a guide for Environmental Health Officers when inspecting pubs and leisure centres.

Action Standards for Soft Drinks Dispense Equipment

Benchmark	Action
<10 coliforms/100ml	No action – continue daily cleaning of soft drinks dispense system **(Refer to BSDA Dispense Hygiene Guide)**
>10 x <1000 coliforms/100ml	Ensure machine is cleaned following BSDA guidance. Site to be reminded of the need for daily cleaning of soft drinks dispense system **(Refer to BSDA Dispense Hygiene Guide)**
>1000 coliforms/100ml	Contact soft drinks supplier immediately for advice and/or further training

APPENDIX 5

Post Water Contamination Procedures For Vending Machines

Where there has been contamination of mains water supplies with material that is potentially infectious and the water supplier has indicated that it is unsafe to drink (Boil Water or Do Not Drink notices) the following procedures should be introduced. This advice is directed to vending machine operators and to end users of post-mix beverage machines and water coolers in buildings where the mains water supply has been affected

Where the room where the vending machine is located has been flooded

Where either the room where the vending machine is located, or the machine itself has been exposed to flood-water, it is unsafe to use, whether or not the water supply is affected. The machine must be thoroughly cleaned, disinfected and serviced, including replacement of the inlet hose and filter if fitted, before it can be brought back into use.

When the water is unsafe

After notification that the water supply is unsafe without boiling (e.g. contamination by cryptosporidium oocysts), is unfit to drink (e.g. contains possible chemical and microbial contaminants) or has been disconnected, ensure that the water supply to the machine is turned off at the stopcock until a safe water supply is re-introduced.

When a safe supply is restored

During the period where the water supply is unsafe and the vending machine is disconnected there will be the possibility for bacterial growth inside pipework and the stagnant water will need to be cleared before water is used for drinking.

If the supply has been cut off, for example due to flooding, once the treatment works is working again there will be a period where the water supplier will be preparing the system and checking to ensure that the water is safe to drink. In this eventuality it is recommended that the water only be used for flushing toilets and washing. It is important that vending machines are not reconnected until the water supplier is confident that water quality in all the mains system is back to normal and is safe to drink.

When the water supplier has notified consumers that the water is safe to drink the machine can be reconnected using the following procedure:

With the machine disconnected run water from the stopcock into a bucket until it runs clear and cold and then for a further 5 litres. Replace the inlet hose and any water filter (if fitted) with new items. For machines dispensing cold drinks or cold water, sanitise the water pipework and chiller using the normal operating procedure. Drain the hot tank. Flush all machines through with 10 litres of clean water. No hot drinks should be taken until the boiler has been at temperature for over 5 minutes

APPENDIX 6
Cleaning a drinks vending machine

Need for cleaning
The water and food contact parts of hot drinks vending machines require regular cleaning in order to minimise cross over of flavours between drinks and to reduce bacterial growth on surfaces.

The purpose of this routine cleaning is the same as that of washing up, to remove food particles and leave surfaces looking clean. Where there is a particular need to reduce levels of bacteria a more rigorous cleaning procedure using disinfectants can be used.
For advice on bacteria in water and in the cold-water system of a drinks machine see appendix 3.

The advice that follows only relates to machines that make drinks from powdered ingredients. The milk system of coffee machines that use fresh milk and the entire liquid contact system of machines that make milk shakes from powder need daily cleaning and it is important that the manufacturers' instructions are followed.

Potential hazards
A thorough risk assessment carried out on drinks vending machines using powdered ingredients has concluded that they pose no threat to health when they are cleaned regularly. This is supported by the fact that there have been no validated reported cases in the UK of people becoming ill after consuming a drink from a machine. The level of bacterial growth in machines is sufficiently low that cleaning with normal detergents is quite adequate; disinfectants are not needed. However,It is good practice to use disposable cloths as inadequate cleaning of cloths during use and between machines could give rise to cross contamination so an assessment should be made on whether disposable cloths should be used.

The greatest potential hazard is from the personal hygiene practices of the operator. In particular operators should wash their hands before starting work. It is best if this is by washing with soap in warm water but, where this is not possible, they should clean their hands with hand sanitiser or cover them with disposable gloves. For a mobile operator this is before starting on the first machine in a building; for a static operator, at the beginning of the morning or afternoon. It is essential that all operators wash their hands after a work break and after using the toilet. Machine parts should not be cleaned in the toilet facilities.

Areas that need cleaning
The only food contact parts that need wet cleaning are the nozzle and the mixing bowls.
All other parts should be brushed off or wiped with a clean damp cloth using freshly prepared detergent solution.

Routine cleaning procedure
All machines should be cleaned according to a written cleaning procedure that details the materials to be used and the order in which to clean. Most manufacturers provide guidance on cleaning their machines, which should be followed.
Two approaches are used in the industry, cleaning on site or removal of some or all water contact parts for off site cleaning in a industrial washing machine off-site and replacement bywith a clean set. For cleaning on-site, single use disposable cloths are generally preferred to brushes due to the risk of cross contamination if the brushes are not cleaned between machines. Where brushes are used they should be cleaned regularly, preferably in an industrial dishwasher.

The following is an example of a routine on-site cleaning procedure:

1. Use the detergent provided, adding one capful to half a bucket (5 litres) of warm water.
2. Refill cups and canisters, wipe over canisters.
3. Remove mixing bowls, immerse in the detergent solution & clean thoroughly to remove deposits of ingredients.
4. If the machine design permits, remove the nozzle for cleaning or replacement by a clean nozzle.
5. Clean the dispense area and nozzle with a clean damp cloth and detergent solution.
6. Clean the inside of the machine with a clean damp cloth.
7. Dry the cleaned mixing bowls with a paper towel or dry cloth.
8. Replace parts and flush through with hot water.
9. Remove, empty and clean the waste bucket.
10. Clean inside the base of the machine and replace the waste bucket.
11. Ensure the machine is put back into use and operating correctly.
12. Clean the cleaning materials/equipment and store appropriately.

Supervision

It is good practice to audit the performance of operators by occasional observation and inspection.

Special cleaning procedure

Normal cleaning procedures are effective for routine cleaning of machines but occasionally they fail to reduce bacterial counts to levels that are considered acceptable. In these rare situations the following cleaning procedure has proved to be effective and would be the appropriate procedure if a coliform count of greater than 1000/100ml were determined. It is focussed on cleaning the dispense head as this is the part of the machine most likely to be affected causing high counts, but the method is applicable to all parts of the machine. The method consists of six stages: Preclean, Main Clean, Rinse, Disinfect, Final Rinse, Dry.
It specifies the use of a clean brush as brushing has been shown to be more effective than wiping with a cloth in difficult to clean cases, including those with deposits of soft drink on the nozzle.

1. **Pre clean**
   Using damp clean disposable cloth soaked in warm water (44°C), soak cloth in cleaning agent solution and remove excess water. Separate the components of the dispense head and clean with the cloth.

2. **Main clean**
   Using a clean brush, brush all parts of the dispense head to dislodge any dried-on material until all parts are visibly clean. Either discard the brush or put it aside for cleaning and sanitisation.

3. **Rinse**
   Rinse the parts of the dispense head whilst wiping with a new disposable cloth soaked in warm water (44°C) until all soil and cleaning agent residues have been removed.

4. **Disinfect**
   Now that the parts of the dispense head are visibly clean, disinfection will be more effective.
   Soak a fresh disposable cloth in disinfectant solution and wipe it over all parts of the dispense head. Ensure that all dispense nozzles have been wiped. Leave for 10 minutes.

5. **Final Rinse**
   Thoroughly rinse off disinfectant using a clean disposable cloth that has been soaked in clean warm water (44°C).

6. **Dry**
   Dry the dispense head with disposable towel and reassemble.

APPENDIX 7
Ice machines

There are several stages from water entering the ice maker machine to consumption by the customer where microbial and chemical contamination could occur which is why the following recommendations should be followed for the hygienic production of ice.

Location of machine:
- The machine should be positioned in a clean and well-lit area, free from dust and dirt, preferably raised from the ground.
- It is important to ensure that air inlet and air outlet pipes within the heat exchanger are not obstructed.
- It is important to allow sufficient space for maintenance/servicing and to ensure there is adequate ventilation for air flow around the unit.

Water supply to machine:
- Machines should be plumbed via a double check valve into a rising mains water supply.
- Machines should drain directly into the main drains via a U-bend in the outlet, to prevent contaminated air and water flowing back into the machine.

Servicing of machine:
- The machine should be regularly serviced according to the manufacturer's instructions.

Maintenance and cleaning of machine:
- All accessible surfaces of the machine should be cleaned daily
- Ice buckets, scoops and tongs should be only used for ice, should not be stored in the ice and should be cleaned daily
- The machine should be emptied of ice and the container sanitised regularly.
- It is important to keep records of maintenance and sanitisation procedures and any action taken

Staff handling of ice:
- Staff should have basic food hygiene training, in particular on the need to wash their hands and to cover cuts and grazes with waterproof dressings.
- Staff must be made aware that ice needs to be kept clean.
- Staff should ensure that the scooping device handle does not come into contact with the ice itself.
- Ice contained in a bucket should be at a distance from the customers' reach to avoid the risk of contamination.

Food Industry Guides to **Good Hygiene Practice**

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