TECHNICAL SPECIFICATION

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Prerequisite programmes on food safety —

Part 2: Catering

Programmes prérequis pour la sécurité des denrées alimentaires —

Partie 2: Restauration

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 22002-2 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 17, *Management systems for food safety*.

ISO/TS 22002 consists of the following parts, under the general title *Prerequisite programmes on food safety*:

— *Part 1: Food manufacturing*

— *Part 2: Catering*

— *Part 3: Farming*

The following parts are under preparation:

— *Part 4: Food packaging manufacturing*

— *Part 5: Transport and storage*

Introduction

ISO 22000 sets out specific food safety requirements for organizations in the food chain. One such requirement is that organizations establish, implement, and maintain prerequisite programmes (PRPs) to assist in controlling food safety hazards (ISO 22000:2005, 7.5).

This part of ISO/TS 22002 does not duplicate the requirements given in ISO 22000 and is intended to be used when establishing, implementing, and maintaining the PRPs specific to the organization(s) in conjunction with ISO 22000, to assist in controlling basic hygienic conditions in catering activities.

Food safety has to be ensured at all stages of the food chain. In the case of catering services, prerequisite programmes have to be established in organizations which, as applicable, prepare, process, cook, store, transport, distribute, and serve food for human consumption at the place of preparation or at a satellite unit.

The following applications of this part of ISO/TS 22002, in accordance with ISO 22000, are possible.

a) An organization can develop the PRPs part of codes of practice or check that an existing code of practice is consistent with this part of ISO/TS 22002.

b) An establishment can implement an ISO 22000 food safety management system. The establishment can use this part of ISO/TS 22002 as a basis to structure and document the PRPs.

Prerequisite programmes on food safety —

Part 2: Catering

WARNING — The text of this document assumes that the execution of its provisions is entrusted to appropriately qualified and experienced people, for whose use it has been produced.

This document does not purport to include all the necessary provisions of a contract.

Users are responsible for its correct application. Compliance with this document does not in itself confer immunity from legal obligations.

1 Scope

This part of ISO/TS 22002 specifies the requirements for the design, implementation, and maintenance of prerequisite programmes (PRPs) to assist in controlling food safety hazards in catering.

This part of ISO/TS 22002 is applicable to all organizations which are involved in the processing, preparation, distribution, transport, and serving of food and meals and wish to implement PRPs in accordance with the requirements specified in ISO 22000:2005, 7.2.

The scope of this part of ISO/TS 22002 includes catering, air catering, railway catering, banquets, among others, in central and satellite units, school and industry dining rooms, hospitals and healthcare facilities, hotels, restaurants, coffee shops, food services, and food stores.

NOTE 1 For very small and medium enterprises (VSMEs), it is possible that some requisites are not applicable.

Users of catering can belong to vulnerable groups, such as children, elderly and/or ill people.

In some countries, the term “food services” is used synonymously with catering.

The application of this part of ISO/TS 22002 does not exempt the user from compliance with current and applicable legislation. Where local legal requirements are in specified for parameters (temperatures, among others) given in this part of ISO/TS 22002, the local requirements shall be used by the food business.

Catering operations are diverse in nature and not all of the requirements specified in this part of ISO/TS 22002 apply to an individual establishment or process.

Although the use of this part of ISO/TS 22002 is not mandatory for complying with the requirements in ISO 22000:2005, 7.2, there is a requirement for deviations (exclusions made or alternative measures implemented) to be justified and documented when this part of ISO/TS 22002 is used as reference for the PRPs implemented. It is not intended for such deviations to affect the ability of the organization to comply with the requirements of ISO 22000.

This part of ISO/TS 22002 specifies detailed requirements to be considered in relation to ISO 22000:2005, 7.2.3.

In addition, this part of ISO/TS 22002 adds other aspects such as product recall procedures which are considered relevant to catering operations.

NOTE 2 Measures for prevention of malicious contamination are outside the scope of this part of ISO/TS 22002.

This part of ISO/TS 22002 is intended to be used when establishing, implementing, and maintaining the PRPs specific to the organization(s) in accordance with ISO 22000.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 22000:2005, *Food safety management systems — Requirements for any organization in the food chain*

ISO 21469:2006, *Safety of machinery — Lubricants with incidental product contact — Hygiene requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22000 and the following apply.

3.1
catering
preparation, storage and, where appropriate, delivery of food for consumption, at the place of preparation or at a satellite unit

[SOURCE: CAC/RCP 39:1993,[2] 2.1, modified]

3.2
cleaning
removal of soil, food residues, dust, grease or other objectionable matter

[SOURCE: CAC/RCP 1:1969,[1] 2.3]

3.3
contamination
introduction or occurrence of a contaminant (3.4) in food or food environment

[SOURCE: CAC/RCP 1:1969,[1] 2.3]

3.4
contaminant
any biological or chemical agent, foreign matter, or other substances not intentionally added to food which may compromise food safety or suitability

[SOURCE: CAC/RCP 1:1969,[1] 2.3]

3.5
cross-contamination
contamination of cooked and pre-cooked foods by direct or indirect contact with material at an earlier stage of the process

Note 1 to entry: Adapted from CAC/RCP 39:1993,[2] 7.2.1.

3.6
disinfection
reduction, by means of chemical agents and/or physical methods, of the number of microorganisms in the environment, to a level that does not compromise food safety or suitability

[SOURCE: CAC/RCP 1:1969,[1] 2.3]

3.7
establishment
any building or area in which food is handled and the surroundings under the control of the same management

[SOURCE: CAC/RCP 1:1969,[1] 2.3]

3.8
food handler
any person who directly handles packaged or unpackaged food, food equipment and utensils, or food contact surfaces and is therefore expected to comply with food hygiene requirements

3.9
food handling
any operation in the preparation, processing, cooking, packaging, storage, transport, distribution and service of food

3.10
hand washing
removal of dirt from skin with the help of a skin compatible soap

3.11
food ingredient
any substance, including food additives, used in the manufacturing or preparation of food and which is present, whether maintaining its original aspect or modified, in the end product

3.12
lot
set of units of a product which have been produced or processed or packaged under similar circumstances

3.13
portioning
division of food into single or multiple portions

3.14
potable water
water that is suitable for human consumption

Note 1 to entry: Quality standards of drinking water are described in the WHO *Guidelines for drinking water quality*.

3.15
satellite
satellite kitchen
kitchen where food from a central kitchen is portioned, reheated if needed, and made ready for service

3.16
vector
<epidemiology> organism which does not cause disease itself but which transmits infection by conveying pathogens from one host to another

3.17
visitor
person who is not a permanent staff member of the establishment, including external visitors and service support staff

Note 1 to entry: Examples of external visitors are auditors, enforcement officers, suppliers, and contractors. Service support staff includes any other person who is not working in that particular area, e.g. maintenance, management staff, and cleaners.

4 Generic prerequisite programmes

4.1 Layout of premises

4.1.1 Infrastructure

The establishment and its facilities shall be of solid construction and maintained in good condition. All materials shall be such that they do not transmit any undesirable substances to the food.

The establishment and its facilities should be located away from areas which may cause contamination from groundwater (e.g. dumping-ground, sewage drains, sewage treatment plants, and livestock farms) and areas susceptible to pest infestations.

The buildings and its facilities shall be designed and constructed with the functional characteristics, location, and layout that are suitable for the needs of each working area. The operations shall be carried out under appropriate hygienic conditions from receipt of raw materials to consumption of the product.

The layout of the building shall be such that it prevents cross-contamination of operations by partition, location, etc.

The areas or facilities incompatible with any hygienic operation of catering, such as housing areas, bathrooms, laundries, cleaning material warehouses, machinery rooms, and waste storage rooms, shall be separated to avoid the risk of contamination of the food and food contact surfaces. The layout should ensure that the product flows in one direction.

NOTE For instance, contamination with sprays, potentially toxic substances, dust, dirt and any other contaminating matter.

4.1.2 Workspace

4.1.2.1 General

Different areas shall be designed in order to allow the proper arrangement of equipment and materials to avoid cross-contamination. For that purpose, work areas shall be clearly identified and marked, physically or functionally.

All areas shall be appropriately designed with adequate space to facilitate the food operations, as well as their cleaning and maintenance.

The reception of materials shall be performed in a protected and clean area. The establishment should have a designated area for receipt of goods and this area should ensure the hygienic management of all goods.

Effective measures shall be taken by the establishment in order to avoid cross-contamination, e.g. ready-to-eat food shall be kept separate from raw or non-treated food.

Potentially hazardous raw products should be processed in a separate room, or in areas that are separated by a barrier, from areas used for preparing ready-to-eat foods.

4.1.2.2 Food-handling areas

Surfaces of walls, floors and ceilings shall be waterproof, non-absorbent, washable, materials without crevices; in addition, floors shall be made of non-slip material. Joints between the floors and the walls shall be vaulted or rounded, where appropriate. Doors shall be non-absorbent, resistant and have a smooth and undamaged surface. The use of materials that cannot be adequately cleaned and disinfected shall be avoided.

An adequate drainage system shall be provided, especially with regards to areas where a high volume of operations and continual transit of personnel and equipment takes place, e.g. wash-up areas, areas where dishes, utensils, and other equipment are washed.

Ceilings and overhead fixtures shall be constructed and finished to minimize the build-up of dirt and condensation, and the shedding of particles.

Windows and other openings shall be constructed to avoid accumulation of dirt and those which open shall be fitted with insect-proof screens. Screens shall be easily movable for cleaning and shall be kept in good condition. Internal window sills, if present, shall be sloped to prevent use as shelves. Doors shall have smooth, non-absorbent surfaces, and be self-closing and close fitting.

NOTE For further clarification, see CAC/RCP 1:1969,[1] 4.2.2.

4.1.3 Lighting and ventilation

All the areas shall be provided with an adequate lighting system. Lighting systems shall be designed so that they do not adversely affect food. Light fixtures shall be protected to ensure that materials, product or equipment are not contaminated in case of breakage. The lighting provided (natural or artificial), shall allow personnel to operate in a hygienic manner.

Appropriate ventilation systems shall be designed for the particular process or product, and shall be capable of maintaining the temperature and humidity requirements for the process or products. The direction of airflow, whether natural or artificial, shall pass from a clean to a dirty zone. All openings shall have protection devices and systems to prevent contamination (e.g. laminar air flow, air curtains, and double doors).

Good ventilation shall be provided in food preparation areas, e.g. cooking areas, in order to dissipate high thermal loads and vapour effectively.

Exhaust hoods that are easy to clean shall be provided to remove all vapour generated in the process.

NOTE For further clarification, see CAC/RCP 1:1969,[1] 4.4.6 and 4.4.7.

4.1.4 Personal hygiene facilities and toilets

Personnel hygiene facilities shall be available to ensure that the degree of personal hygiene required to carry out the operations of the organization can be maintained safely. The facilities shall be located close to the points where hygiene requirements apply and shall be clearly designated.

Establishments shall:

a) provide adequate numbers, locations and means for hygienically washing, drying and, where required, disinfecting hands (including washbasins, supply of water at an adequate temperature, and soap and/or disinfectant);

b) have sinks designated for hand washing, whose taps should preferably be activated by foot, knee, elbow or sensor, and be separated from sinks for food use and equipment-cleaning stations;

c) have hygiene facilities for personnel that do not open directly to production, packing or storage areas;

d) have adequate changing facilities for personnel;

e) have changing facilities sited so as to enable personnel handling food to move to the production area in such a way that risk to the cleanliness of their workwear is minimized;

f) comply with microbiological criteria for water used for hand washing that are in accordance with potable water;

g) provide hand-washing facilities both inside and outside the food-processing areas.

NOTE For information on number of toilets to be provided please refer to CAC/RCP 25-1979,[5] (superseded).

4.1.5 Maintenance

The building, equipment, utensils, and all the establishment facilities, including drainage systems, shall be kept in an appropriate state of maintenance and condition to facilitate all hygiene procedures; function as intended; and not cause contamination of food.

The establishment shall ensure that food safety is not affected during maintenance operations.

A preventive maintenance programme shall be in place.

The preventive maintenance programme shall include all devices used to monitor and/or control food safety hazards.

Corrective maintenance shall be carried out in such a way that production on adjoining lines or equipment is not at risk of contamination. If there is risk of contamination in adjoining lines or equipment during corrective maintenance, food processing in adjoining lines and equipment shall be suspended to prevent contamination. Maintenance requests which impact product safety shall be given priority.

Temporary repairs shall not affect food safety. A request for replacement by a permanent repair shall be included in the maintenance schedule.

Lubricants and heat transfer fluids shall be food grade where there is a risk of direct or indirect contact with the product in accordance with ISO 21469.

The procedure for releasing maintained equipment for return to production shall include cleaning and disinfection procedures, and pre-use inspection.

Local area PRP requirements shall apply to maintenance areas and maintenance activities in process areas.

Maintenance personnel shall be trained in the food safety hazards associated with their activities.

NOTE For food processing equipment, requirements for construction and design are specified in ISO 14159.[6]

4.2 Water supply

4.2.1 Potable water

Water supply at adequate pressure and temperature shall be provided, as well as suitable facilities for its storage. The water storage facilities shall be cleaned and periodically monitored.

When private well water or private source water is used to make potable water, disinfection devices and/or water-purifying devices shall be established. Only potable water shall be used. Records of controls performed shall be retained and only water of potable quality shall be used in the food business.

Steam used in direct contact with food or food contact surfaces shall be made from potable water.

4.2.2 Ice

The ice used in direct contact with food or food contact surfaces shall be made from potable water and be transported, handled, and stored in a manner that protects it from contamination.

The facilities used to make and store ice shall be suitable to prevent contamination and shall be cleaned, disinfected and maintained in accordance with the manufacturer's instructions.

Mechanisms for confirming the microbiological quality of the ice, whether purchased or made on site, shall be established.

4.2.3 Non-potable water

All non-potable water used in refrigeration, steam production, fire control, spilling dilution or other similar activities, shall be carried through adequate pipes thoroughly separated from those carrying potable water, without any transversal connections among them or the possibility of non-potable water refluxing to potable water pipes. Such pipes shall be clearly identified, preferably with standardized colours, e.g. in accordance with ISO 14726.[8]

4.3 Equipment and utensils

Equipment and utensils shall be made of impervious and corrosion resistant materials, that does not transfer toxic substances, odour or flavour to food. The equipment and utensils shall be capable of withstanding frequent cleaning and disinfection operations, and shall be smooth and free from holes, crevices or cracks.

Portable equipment, e.g. spoons, beaters, pots, and pans, should be protected from contamination.

All the equipment shall be designed and built in order to ensure general hygiene conditions and their surfaces shall be easy to clean and to disinfect.

Equipment at catering establishments shall be subjected to maintenance programs including the calibration of measuring instruments such as thermometers and devices for registering temperature. There shall be control and identification records kept of the equipment and utensils according to their specifications.

See also 4.1.5.

4.4 Personnel hygiene

4.4.1 General

Responsibility for ensuring compliance by all personnel with all requirements of 4.4 should be specifically allocated to competent supervisory personnel.

Visitors, e.g. regulatory inspectors, clients, and maintenance personnel, shall be given access to the food-handling areas on a restricted basis. These visitors shall use protective clothing and comply with the food safety requirements of the catering business.

4.4.2 Hygiene training

Adequate, relevant, and continuing training shall be given to all personnel of the catering establishment in personal hygiene. Training should include relevant parts of this part of ISO/TS 22002. Records of training shall be retained.

The training should include a description of personnel illnesses or states of health that may affect the safety of the food product, and of which the management should be informed. Effectiveness of training should also be evaluated.

4.4.3 Health status

4.4.3.1 General

The management of the food establishment shall ensure that the health of the personnel engaged in the activity does not have an adverse effect on the food. Any individual affected by a contagious illness or exposed wounds shall not be allowed to work in food-handling areas where there may be a risk of contamination of food.

4.4.3.2 Medical examination

Medical examination of staff prior to employment in the food catering shall be carried out if required:

a) by the official agency having jurisdiction;

b) because of epidemiological considerations;

c) medical history of the catering staff;

d) the nature of the food products being prepared.

NOTE It is possible that regional and national regulations for medical examination of personnel apply.

4.4.3.3 Communicable diseases

Catering staff shall not be permitted to enter the area where food is stored and handled while known or suspected to be suffering from, or to be a carrier of, a disease likely to be transmitted through food or while afflicted with infected wounds, skin infections, sores, or with vomiting or diarrhoea.

Personnel should be encouraged to report to management any illness or state of health that may affect the safety of the food product.

If an employee is restricted from working in a food-handling area because of a communicable disease, he/she should receive clearance from a competent medical professional before returning to work.

4.4.3.4 Injuries

Any person who has a cut or wound shall not continue to handle food or food contact surfaces until the injury is completely protected by a waterproof covering which is firmly secured. Adequate first aid facilities should be provided for this purpose.

4.4.4 Personal cleanliness

4.4.4.1 General

Every catering staff engaged in a food-handling area shall maintain a high degree of personal cleanliness while on duty, and shall wear suitable protective clothing including hair, moustache and beard covering, If necessary, suitable footwear should also be used. All protective clothing should be cleanable unless it is disposable. Protective clothing shall be maintained in a clean condition consistent with the nature of the work in which the person is engaged. All protective clothes shall be used exclusively in the catering establishment. If necessary, surgical masks should be used.

Aprons and similar items shall not be washed and/or dried in food-handling or preparation areas. During periods where food is manipulated by hand, rings shall be removed from the hands or covered. Personnel should not wear other jewellery items when engaged in food handling.

4.4.4.2 Hand washing

Catering personnel shall wash their hands frequently and thoroughly with a soap and/or disinfectant agent under running, potable water while on duty. Hands shall always be washed before beginning work in food area, immediately after using the toilet, after handling contaminated material, and whenever necessary.

Hands shall be washed, and disinfected where appropriate, immediately after handling any material which might be capable of transmitting disease, or contaminating food or equipment. Notices requiring hand-washing and disinfection should be displayed. There shall be adequate supervision to ensure compliance with this requirement.

Catering personnel shall wash their hands thoroughly at the different stages of food preparation, between one food-handling operation and another where risk of cross-contamination exists.

NOTE 1 The use of alcohol, gels or gloves does not replace the hygienic washing of hands, but it may be complementary.

NOTE 2 For information about sanitation operation procedures (SOPs) for hand washing, see Reference [7].

4.4.4.3 Gloves

Gloves shall be made from materials suitable for food contact and shall be maintained in clean and hygienic conditions. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Torn or punctured gloves shall be discarded.

NOTE Chain mail gloves are particularly difficult to clean and disinfect because of their construction. Careful cleaning followed by heating or prolonged immersion in disinfectant is necessary. Some gloves made from reprocessed fibres may not be suitable when handling food.

4.4.5 Personal behaviour

Any behaviour which could result in contamination of food, such as eating, use of tobacco, chewing (e.g. gum, sticks, betel nuts) contacting with their hair, face, nose, etc. or unhygienic practices such as spitting shall be prohibited in food-handling areas.

Clothes or personal belongings as well as office materials, tools, etc., shall not be placed in the food storage or handling areas.

4.5 Purchasing management

4.5.1 Supplier assessment

The catering establishment should set criteria for the evaluation of suppliers and keep records on their compliance with the established criteria.

The degree of control an organization exerts on their suppliers depends on the nature and the intended use of each material. Components contacting food shall undergo stricter controls than those that are unconnected with food production, e.g. office furniture.

Specifications for raw materials to be purchased should take into account the variability inherent to those products and the requirements for specific controls.

4.5.2 Incoming material requirements (raw materials, ingredients, and packaging)

The conditions of raw materials, ingredients, and packaging, in addition to the established criteria, expiration date, and packaging integrity shall be inspected, verified, and approved at point of receipt. Raw materials and ingredients requiring special storage conditions (e.g. temperature), shall be controlled and records should be maintained to demonstrate that the proper storage conditions were provided.

Raw materials, ingredients or packaging batches that are non-compliant shall be immediately returned to the supplier. If this is not possible, these items shall be properly identified, labelled and stored separately until further action can be decided.

Measures shall be taken to avoid contamination of prepared food during receipt of goods.

4.6 Storage and transport

4.6.1 Storage

Refrigerated raw materials of animal origin shall be stored at a temperature less than or equal to 4 °C. Other raw materials requiring refrigeration, e.g. certain vegetables, shall be stored at the lowest temperature allowing their quality to be maintained. Stored raw materials or ingredients shall be kept in adequate conditions to avoid deterioration, protect them from contamination, and prevent damage. Stocks of raw materials and ingredients should be subject to effective stock rotation (e.g. FIFO — first in, first out).

Raw materials, ingredients, and packaging shall be stored off the floor (e.g. rolls, pallets) and with sufficient space between the material and the walls to allow inspection and pest control activities to be carried out.

Raw materials and ingredients that need to be transferred from their original packages shall be handled in an appropriate manner so that they remain protected and with the original label of the product intact; if this is not possible, the label information shall be transcribed on to another label or any other effective method to ensure of traceability of the product.

Raw materials and ingredients shall be inspected and selected before cooking and, if necessary, laboratory tests shall be carried out to establish fitness for use. Only suitable raw materials and ingredients in good conditions shall be used in the preparation of food.

Frozen raw materials not to be used immediately shall be kept or stored at –18 °C or below.

Catering establishments shall be provided with cooling and/or freezing equipment of sufficient capacity to keep food at the adequate temperature, in accordance with the requirements of this subclause, 5.1, 5.5, and 5.6.

The refrigeration equipment shall have devices for measuring and monitoring the temperature of the air or products being cooled and the devices shall be calibrated at regular intervals. Records of temperature monitoring shall be maintained.

Dry supplies store shall be kept under adequate temperature and humidity conditions.

Food packaging materials and food contact materials should be protected from dust and from any other type of contamination.

4.6.2 Transport

Vehicles and containers intended for the transportation of cooked and/or cooled food shall be capable of maintaining the required temperatures and if required be approved by a competent authority.

Food-transporting vehicles and containers shall be designed to maintain the required temperature.

Records to demonstrate correct transport should be available.

Where regional or national time or temperature regulations apply, these shall be used. If not, the temperatures stated in 5.5 to 5.9 can be used to ensure food safety.

Hygienic requirements shall be applied to vehicles transporting finished, ready-to-eat products.

During transport, food shall be protected from dust and from any other type of contamination.

4.6.3 Hazardous substances handling

These products shall be adequately labelled and stored in key-locked rooms or cabinets exclusively designated for that purpose.

NOTE Examples of hazardous substances are chemicals and biocides.

Hazardous substances shall be stored in their original packaging and adequately labelled with information about their identity, use and toxicity. Such products shall be reserved for specific purposes only and shall be used or handled only under supervision of appropriately trained or authorized personnel.

New or used food packaging material shall not be used for measuring, diluting, dividing or storing hazardous substances.

No hazardous substances shall be used or stored within the food-handling area where there is a potential risk for contamination.

4.7 Cleaning and disinfection

Equipment and utensils shall be cleaned as frequently as needed and disinfected if necessary by using products and methodologies ensuring their hygiene. Appropriate measures shall be taken when rooms, equipment, and utensils are being cleaned or disinfected in order to prevent contamination of the food e.g. by water, washing-up liquids, or disinfecting agents. Products used for cleaning operations, cleaning products, and disinfecting agents, shall be suitable for their intended use and used in accordance with the manufacturer's instructions, properly identified, stored away from processing areas and used in a manner that does not cause food contamination and not be stored in food packages and containers.

NOTE 1 Approved or listed cleaning products and disinfecting agents are available in some countries.

NOTE 2 Safety and technical data sheets are often available for products in use.

Immediately after work is finished or as frequently as necessary, the floors, including drains, the ancillary structures, and the walls in the rooms used for food handling shall be carefully cleaned. This operation shall not take place during food preparation activities.

The equipment or items used for cleaning and disinfection shall be kept and stored separately so that they do not contaminate food, utensils, equipment or the personnel clothes (see 4.1.4).

Changing rooms and toilets shall be kept clean at all times. Equipment used for cleaning as well as personnel protective uniforms shall be used only for cleaning toilets and changing rooms.

Access areas and yards neighbouring catering facilities shall be kept clean and clear.

Checks on inspection shall be carried out to verify that the cleaning process was carried out in accordance with established procedures and that it has achieved the standard of cleanliness required (e.g. checking for cleaning-related records, microbial tests for the already cleaned facilities and equipment).

Any equipment which has been in contact with raw material or contaminated substances shall be cleaned and, if necessary, disinfected, and shall comply with a cleaning and disinfection programme before being used for contacting and/or serving food. The equipment used in food preparation, e.g. for peeling, slicing, and grinding, should not be used to prepare ready-to-eat foods.

Personnel handling raw materials or semi-processed products which are likely to contaminate the end product shall clean their hands and the utensils between operations, e.g. employees at a grill shall use one utensil for raw meat and another for serving cooked meat.

Cleaning and disinfection devices and agents shall be kept separately in such a way that they do not contaminate food, utensils, equipment, and clothes.

4.8 Waste management

4.8.1 Effluent and waste disposal

The establishment shall have collecting bins in adequate numbers and capacity to contain waste.

Where it is not possible to have distinct areas for food entry and waste exit of waste, different times for the such entry and exit shall be determined.

The collecting bins used for waste disposal in preparation and storage areas of food should be provided with hands free covers.

Suitable provision shall be made for the removal and storage of waste. Waste shall not be allowed to accumulate in food-handling, food storage, other working areas and the adjoining environment except so far as is unavoidable for the proper functioning of the business. Waste stores shall be kept appropriately clean.

All the disposal ducts shall be constructed so as to prevent the contamination of the potable water supply. All the ducts for residual water disposal shall be thoroughly siphoned and shall flow into a drainage system.

Areas both inside and outside food premises shall be kept appropriately clean.

Grease traps and sewer shall be of compatible dimension for the volume of waste and shall be located outside the area of food preparation and storage and shall have adequate maintenance.

Accumulated waste should be managed so that it does not become a source of contamination.

4.8.2 Waste handling

In kitchens or rooms where food is prepared, waste shall be placed in detachable, impervious and resistant rubbish bags within properly identified containers. Those containers shall be kept covered with a lid and removed from the work area as soon as they are filled or after each work shift and disposed into covered containers which shall not be stored in the processing area.

Waste containers shall be kept in an enclosed area reserved for that specific purpose and separately from food stores. The temperature shall be maintained as low as possible and the area shall be provided with good ventilation, lighting, and protection from insects and rodents. It shall be easy to clean, wash and disinfect. Waste containers shall be cleaned and disinfected when necessary.

Empty packages and wrappers shall be disposed in the same conditions as waste materials. Waste compacting equipment may be used and shall not be stored in the food-handling areas.

Food waste shall be stored in pest-proof containers and/or stacked above the ground and away from walls. Where appropriate, refuse should be stored in covered, pest-proof containers. Used oil shall be stored in a suitably identified covered container until its removal. The establishment shall ensure the proper storage and disposal of used oil.

4.9 Pest and animal control

4.9.1 Pest control

A continuous and effective pest control programme shall be implemented and documented. The programme shall include a set of effective and continuous actions to control the vectors and pests, to prevent their attraction, access, shelter, and/or proliferation. The establishment and surrounding areas shall be inspected periodically to ensure there is no infestation. Where pests invade the building, eradication measures shall be adopted and verified for effectiveness, and the results shall be recorded. Buildings shall be well maintained to prevent ingress by pests and all pest entry points shall be sealed.

Pest control measures comprising treatment with mechanical, biological or chemical agents that have been approved for use by the competent authorities shall be put into practice at the food business by a suitably qualified or trained person. Adequate records of the use of pesticides shall be kept.

Chemical agents shall be used only if other measures cannot be adopted and these products shall be suitable or approved for use in food production areas. Prior to the application of pesticides, care shall be taken to protect food, equipment and utensils against contamination. The pesticide application shall be carried out without posing a threat to the safety or suitability of food. After the pesticide application, the equipment and utensils exposed shall be thoroughly cleaned so that any residue is removed before their subsequent use. Pesticides shall be adequately labelled and stored in an enclosed area intended for that specific purpose.

4.9.2 Absence of domestic animals

Domestic animals shall be excluded from areas where food is stored and handled as they are a source of contamination.

NOTE It is possible that regional and national regulations on domestic animals apply.

4.10 Management and supervision

All catering-related activities shall be controlled and supervised by management, regardless of volume and the type of food involved.

The top management of the catering establishment shall ensure that good manufacturing practices for food processing are being implemented effectively in the catering facility. The top management shall also ensure that the potential hazards are correctly assessed and ensure the effective supervision of catering operations.

All supervision should be carried out by a competent person.

Supervisory duties should be carried out by personnel of appropriate authority.

4.11 Documentation and records

The catering organization shall keep adequate records.

Records that shall be kept for the appropriate time on procedures relating to:

a) hygiene of water tanks;

b) hygiene of facilities, equipment, furniture and utensils, including cleaning and disinfection operations;

c) integrated controls of transmission vectors and pests;

d) hygiene, health and training of food handlers;

e) temperature control according to law and establishment procedures (food and equipment);

f) others as needed or required.

All documented procedures shall contain the sequential operations and their frequency, specifying the name, position and/or role of those responsible for the activities, monitoring, verifying, and correcting procedures. They shall be approved, dated and signed by the personnel responsible for the establishment and be available whenever needed.

4.12 Product recall procedures

Product recall procedures should be established. See ISO 22000:2005, 7.10.4.

5 Specific prerequisite programmes

5.1 Thawing

The pre-prepared products shall be kept under refrigeration or frozen conditions, properly protected and identified in an appropriate manner before it is used or prepared.

When the raw materials and ingredients are not used entirely, these shall be properly packaged and identified (e.g. product description, date of fractioning, date of validity after opening or withdrawal of the original packaging depending on the raw materials and ingredients).

The food thawing area shall be kept clean, and/or physical barriers developed that prevent cross-contamination, such as separate areas or separation by schedules. Work in small batches rapidly under suitable refrigerated conditions in order to maintain the products at a safe temperature.

During the thawing process, food should be maintained in sealed containers, wrappers or protective packages where possible those used at the freezing stage. Large pieces of meat shall be thawed before cooking.

When thawing constitutes a separate operation from cooking, it shall be carried out in:

a) a refrigerator or thawing chamber constructed for that purpose capable of maintaining a temperature of less than or equal to 4 °C; or

b) any other national or international approved procedure.

Food shall be thawed in conditions which ensure that no part of the food reaches a temperature above 4 °C. For ready-to-use products, food should be checked to ensure that thawing is complete and no ice crystals remain throughout the products prior to service.

Where specified by the manufacturer, some frozen food may be cooked or served without thawing.

NOTE It is possible that regional and national time and temperature regulations apply.

5.2 Preparation

5.2.1 Fresh fruits and vegetables

The preparation shall be performed under suitable conditions in a well illuminated area.

The pre-prepared products shall be kept under suitable conditions (e.g. refrigeration), and adequately labelled where appropriate.

Depending on the product and its intended use, selected, pre-washed, and, if necessary, pre-cut fruits and vegetables should be:

a) washed with potable water, with added disinfectant where appropriate and legally permitted;

b) rinsed with potable water (where appropriate and legally required).

5.2.2 Other raw materials

Depending on the product and its intended use, the product should be:

a) selected and pre-cut, if necessary; and

b) washed with potable water,

5.3 Cooking

Where there are no regional or national time/temperature regulations, the following can be used to ensure food safety.

Cooking time and temperature shall be of adequate duration at specified minimum temperature to ensure the destruction of vegetative cells of pathogenic microorganism that may be present in food.

Cooking which best maintains the nutritional values of food should be used.

In frying operations, only cooking fats and oils manufactured for that purpose shall be used. Where cooking fats and oils are reused, they shall be assessed to ensure they are fit for purpose.

Prior to each operation, reused fats and oils shall be filtered using a specially designed filter in order to eliminate food residues. Food-frying pans should be designed in order to facilitate emptying (e.g. presence of a spigot). Fat and oil quality shall be verified periodically by checking the odour, the colour, the flavour, and floated elements. Other quality characteristics to be considered are, for example, the smoke point, free fatty acid contents, amount of polar compounds.

Cooking oil should be heated to temperatures not exceeding 180 °C.

When products treated through dry, wet or mixed thermal processes are not intended to be consumed immediately, the cooking process should be followed by cooling as soon as possible, or the temperature maintained at or above 63 °C with an adequate core temperature. See 5.5 for cooling conditions.

5.4 Portioning

Strict hygiene conditions shall be in place when portioning food. When portioning refrigerated product, the product should be portioned in a refrigerated area or if not, should be held out of refrigeration for less than 30 min.

Food portions shall be placed in single-use or reusable packages of suitable materials that have been properly washed and disinfected.

Portioned food shall be covered with suitable food contact materials. In large-scale food preparation systems where cooked and refrigerated food cannot be divided into portions within 30 min, the portioning should be carried out in a separate area with an air temperature of 15 °C or below. The

product shall be served immediately or cold-stored at 4 °C. Alternatively and in accordance with work needs, a portioning system for portions may be implemented, indicating preparation and due dates and the identification of the portions.

5.5 Cooling and storage

Where regional or national time and temperature regulations exist, they shall be used when cooling and storing food products. Where there are no regional or national requirements, the following can be used to ensure food safety.

Immediately after preparation, food shall be cooled as quickly and effectively as possible. The core temperature of the product should be lowered to 10 °C within 2 h. After this period, the product should be stored immediately at 4 °C or below.

As soon as the cooling phase has been completed, products shall be stored in cold storage equipment. The product temperature shall not exceed 4 °C at any point and the product temperature shall be maintained until end use. The storage temperature of the product shall be periodically verified.

Where cooked cooled food is stored at 4 °C or below, it should be consumed as soon as possible, ideally within 24 h or otherwise within a defined time, following suitable evaluation (e.g. shelflife studies).

5.6 Freezing, storage and thawing

Immediately after cooling, the product shall be frozen as rapidly as possible.

Cooked frozen food shall be stored at –18 °C or below. The temperature of stored food shall be verified frequently.

Cooked frozen food shall be thawed at 4 °C or below and shall not be refrozen.

5.7 Transport

During transportation, food shall be protected from dust and from any other types of contamination.

The temperature for hot food should be maintained at 63 °C or above. Food should be kept hot during transport at 63 °C or above.

The temperature for food requiring refrigeration shall be maintained at 4 °C or below. Food should be transferred to the transporting vehicle already cooled to the temperature at which it is to be transported.

Vehicles and containers intended for transporting cooked frozen food shall be suitable for that purpose. Cooked frozen food temperature should be maintained at –18 °C or below.

During transportation, control measures shall be set up to ensure that the food safety is maintained, e.g. the transfer time between the transportation means (e.g. truck) and the storage facility should be less than 20 min if there are no methods to control temperature.

5.8 Food reheating

Where regional or national time and temperature regulations exist, they shall be used when reheating food. Where there are no regional or national requirements, the following can be used to maintain food safety.

Food reheating shall be carried out rapidly. The reheating process shall be adequate, and the core temperature of the product shall reach 75 °C within 1 h after removal from the refrigerator. Lower temperatures may be used for reheating; suitable time and temperature combinations shall be used. Heated food temperature shall be monitored at regular intervals.

Reheated products shall reach consumers as soon as possible, at a temperature 63 °C or above.

NOTE The quick reheating process raises the food rapidly through the interval of temperatures between 4 °C and 63 °C. For this purpose, high pressure air ovens or microwave or infrared heaters are generally used.

5.9 Food service

Food that is not to be consumed shall be discarded; therefore it shall be neither reheated nor returned to cooling units (refrigerator or freezer).

In self-service establishments, the distribution system shall be such that the products offered are protected from direct contamination that may derive from the proximity or actions of the individual who serves and who is served. The food temperature shall be 4 °C or below (for cool-stored food) or 63 °C or above for heated food. Clean dishes shall be used for new servings. Dishes on which food remains shall not be used for new servings.

In hot food display, equipment such as water-baths, thermal balconies such as electric or gas, stoves and other forms may be used. All alternatives shall be adjusted so that the food is maintained at the temperature required in this part of ISO/TS 22002, i.e. above 63 °C for up to 6 h, discounting the time that food remains in hot maintenance, prior to exposure. For food whose temperature may be difficult to maintain, e.g. during frying and grilling, among others, the control of time (for up to 3 h or, in accordance with local laws, discounting the time that food remains in hot maintenance before exposure) can be used as an alternative provided it is proven safe.

The equipment shall be of appropriate size and be in appropriate state of hygiene, maintenance, and operation.

In cold-food display, appropriate measures shall be used, e.g. use of cold electric tracks, ice beds, cold showcases, refrigerators or refrigerated balcony of support.

The equipment shall be adjusted in order to keep the food cold at temperatures up to 4 °C and shall be of appropriate size and state of hygiene, maintenance and operation.

If the temperature exceeds 4 °C but is below 10 °C, ensure that the maximum time of exposure is 2 h.

The areas where food is consumed shall be kept organized and in proper hygienic conditions.

The equipment, furniture and utensils available in these areas shall be compatible with the activities, in sufficient quantity and in appropriate maintenance conditions.

The change or cleaning and disinfection of utensils shall be performed at least every 4 h if necessary.

New food shall not be mixed with that which is already exposed, unless both are at a temperature of 63 °C or above or 4 °C or below and there is no food safety risk.

The decorations or plants shall not contaminate the exposed foods.

The establishments shall keep employees responsible for payment (cash, card, etc.) in this specific function, without simultaneously handling prepared foods. If this is unavoidable, then procedures shall be in place to keep food safe.

5.10 Identification and hygiene control system

Where regional or national regulations exist, they shall be used to identify products. Where regional or national regulations are not available, the following can be used to maintain food safety.

A label indicating preparation date, food type, manufacturing establishment name, instructions for use, conservation, and “consume before” date should be present.

Hygiene control procedures shall be carried out by technically competent personnel who possess an understanding of the principles and practice of food hygiene.

Samples of meals should be kept available for further investigation if there is a suspicion of a food-borne outbreak associated with their consumption. When it is not possible to keep samples for all meals, the establishment shall select meals to be sampled according to specific or potential hazards of each meal.

Food prepared in the establishment should be subjected to a microbiological sampling system for quality control and/or investigation purposes if there is suspicion of food-borne illnesses.

Where appropriate for safety, samples should be kept in a sterile container at 4 °C or below until at least 3 days after that whole lot has been consumed.

NOTE 1 It is possible that regional and national regulations to address the issue of food sample testing and retention of food samples apply.

NOTE 2 Some organisms do not tolerate freezing and refrigeration of samples is used instead.

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