




FOOD SAFETY AND STANDARDS
AUTHORITY OF INDIA

Inspiring Trust, Assuring Safe & Nutritious Food
Ministry of Health and Family Welfare, Government of India

GUIDANCE DOCUMENT



FOOD SAFETY MANAGEMENT SYSTEM

FOOD INDUSTRY GUIDE TO IMPLEMENT
GMP/GHP REQUIREMENTS

CATERING SECTOR

Food Industry Guide to implement GMP/GHP requirements

Catering

Based on Part II of Schedule 4 of Food Safety & Standards (Licensing & Registration of Food Businesses) Regulation, 2011

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Disclaimer

It is to be noted that this guidance document does not intend to replace any legal provision of Food Safety & Standard Act, 2006 & regulations thereunder. Further, wherever the provision of this document conflicts with Part II & Part V of Schedule 4 of Food Safety & Standards (Licensing and Registration of Food Businesses) Regulation, 2011 or any other regulation under Food Safety & Standard Act, 2006 for that matter, the provision given in the regulations shall prevail.

PREFACE



This Guidance Document on Food Safety Management System (FSMS) is prepared with the intent to provide implementation guidance to food businesses (especially the small and medium businesses) involved in manufacturing, packing, storage and transportation of food in catering sector, to ensure that critical food safety related aspects are addressed throughout the supply chain.

This document contains practical approaches which a business should adopt to ensure food safety; however, food businesses may adopt higher or stringent levels, depending on the needs & complexity of operation. The use of this guidance is voluntary and food business operators may comply with the requirement of the regulation according to other established best practices.

It is important that food handlers involved in the catering industry are trained appropriately to implement the good manufacturing practices and good hygiene practices to ensure food safety.

We acknowledge the contribution of the experts from the technical panel of FSSAI for developing this document.

Pawan Agarwal – CEO, FSSAI

SCOPE

This document is applicable for food businesses involved in preparation, processing, distribution, displaying, packaging, selling (including free of charge) and serving food. A broad range of food establishments that include, but are not limited to, the following:

- Restaurants, hotels, cafeterias and cafés;
- Food service operations in institutions, hospitals, schools & religious places;
- Bakeries, snack bars, eating houses;
- Food catering units- rail & airline;
- Kiosks, temporary or permanent food events, and mobile vending operations;

All the above activities may or may not be carried by the same facility. Hence, based on their position in the food supply chain, a catering industry could use the guidance document as per the operations applicable to them. This document provides guidance for FSMS implementation for various stages of food handling and production in catering.

The document is divided into five main sections. The first section gives an overview of the catering industry in India along with the rising need for food safety in the sector. The second section contains guidance for implementation of good manufacturing practices and good hygiene practices as outlined in Part II & Part V of Schedule 4 of Food Safety & Standard (Licensing & Registration of Food Businesses) Regulation, 2011. The document has specified requirements where compliance is essential and obligatory for food businesses and in such cases the word “shall” is used. In addition certain good practices are also strongly advised for food safety operation & in such case “should” is used.

The third section of this document is recommendatory in nature and provides the basic knowledge and criteria for implementation of Hazard Analysis and Critical Control Point (HACCP) system by the food businesses. This section includes food production flow chart & tables: Hazard Analysis and HACCP Plans. Tables of Hazard Analysis is expected to help the industry to identify the food safety risks related to each processing step, to identify the Critical Control Points (CCPs) along with recommended corrective actions and other related information. Sample HACCP Plans have been taken from some established practising catering industries. These plans could be used as reference by the industry and modified or altered based on their operations.

The fourth section provides an inspection checklist for Food Business Operator to audit their facility & operations. The FBOs can evaluate themselves based on the indicative scoring. The last section gives important templates and forms which will be required by FBOs to maintain the records. This includes mandatory forms as prescribed by FSSAI & few templates for maintaining records of processes critical for food safety.

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A. OVERVIEW OF CATERING INDUSTRY IN INDIA

OVERVIEW OF CATERING INDUSTRY IN INDIA

The catering industry could be referred to as a hospitality industry which makes provision of food, drinks and in some cases accommodation for people in school, hospital industry etc. However, it is possible to make a number of distinctions between the many different types of food and beverages outlets in the catering industry.

Types of Food products

Catering industries offer a wide variety of food products based on consumer preferences. A catering outlet may vary from Quick service restaurants (QSRs) to cafes to fine dining restaurants. Thus, the food offered is prepared food that can vary from regional street foods to multi-continental cuisines.

Structure of the Industry

The market sector can be broken down into three segments:

- Unorganized: It includes roadside eateries and *dhaba* which have been the common eating out option eg. Street foods, *dhabhas*, etc
- Organized Sector: consists of:
 - a) Standalone restaurants across all the formats with less than 3 outlets.
 - b) Chain format which has 3 or more outlets across all formats.
Eg: QSRs, Restaurants etc.
- Special Categories: includes flight catering, hospital catering, railway catering, catering in Govt. Programs (Mid-Day Meals) etc.
- Others: Event caterers which are involved in catering at venues having varying set of food processes and food handling from venue to venue.

Based on Premise the catering industry can be categorized into:

- On- Premise Catering - is catering for any function, banquet, reception, or event that is held in the physical premises of the establishment or facility where the function is organized.
- Off-Premise Catering - often involves producing food at a central location. Part or all of the production of food may be executed or finished at the event location. At times, off-premise caterers must rely on generators for electricity, tankers of potable water and devise a waste disposal system

Based on Consumer Choices and Services provided the catering industry can be categorized into:

- Quick Service Restaurants (QSR): Also called fast food joints; serve processed foods fast at low prices; typical menu items include burgers, pizza, milkshakes, French fries; minimal table service; also provide takeaway and home delivery
- Casual dining: Offer moderately priced food, casual atmosphere and quick table service. Some also provide takeaway and home delivery

- Fine dining: Offer finest in food, service, and ambience; high priced; staff highly trained; usually located in luxury hotels in metropolitan cities
- Cafés: Outlets serving a range of coffee and other hot and cold drinks, and quick bites such as pastries

Market Data for Catering Industry

“Catering in India has now become integral part for the success of various events and social occasions. It is one of the fastest growing sectors that has seen surge in demand across the country and has contributed a major financial share in the last financial year 2016. The total market share in FY 2016 of catering establishments were Rs 3,09,110 Cr that has grown by 7.7 %.

Table 1: Financial Share of Catering Sector in FY 2016 and expected growth in next FY 2021

Food Services : Contribution (In Cr)		
	2016	2021
Chain market	20,400	50,950
Standalone market	72,255	1,39,660
Standalone hotels	8,820	13,570
Unorganized market	2,07,635	2,93,950
Total market	3,09,110	4,98,130

The Indian catering sector though largely unorganized (nearly 67% in 2016) is estimated to be dominated by over two-million caterers primarily in metros, tier 1 and tier 2 cities. Caterers have adapted innovative flair while doing it on grand scale from weddings, social gatherings, formal events, conferences and parties.

Table 2: Market Share of various catering establishments and expected shift

Catering Sector	2013	2016	2021
Unorganized Market	70 %	67%	59%
Organized Standalone	22%	23%	28%
Chain Market	5%	7%	10%
Restaurants in Hotel	3%	3%	3%

The sector has witnessed paradigm shift over the years with state- of- the- art technological offerings, innovative concepts, growth in Indian regional food, multi cuisine cross region specialties and global cuisine trends being decisive factors. With thriving growth in industries and IT/ ITES sector, corporate catering with classic courses of delectable menu is gaining lots of popularity. As per recent report there has been significant increase in online search for catering services, esp. restaurants that are emerging as an important local service category. Also, the report indicated a tremendous increase in restaurants. It is estimated that the top 75 cities across India have 1,50, 000 – 1,75,000 restaurants in the organized segment.

Table 3: The top 5 cities in India with large market size for various food catering outlets are:

S.No.	Cities	Market Size (in Cr rupees)
1.	Delhi/NCR	32,885
2.	Mumbai	32,330
3.	Kolkata	12,200
4.	Bengaluru	11,740
5.	Chennai	10435

The tremendous boom in catering industry, eating out is not uncommon and today people venture out of their homes more often to savor delicacies. This poses extra responsibilities on the food businesses to ensure safe and wholesome food to its consumes. It is estimated that about 23 to 30 Cr people are eating either a meal or a snack from some outside kitchen daily. The catering industry possess various challenge related to ensuring safe food. They are:

1. Sub Standard/ contaminated raw material: Catering industry have little or no control on the safety of raw materials such as pesticides residues, veterinary drug residues, etc.
2. Lack and Clean Surrounding: The outlets located in high traffic zones like bus stands, railway stations, roadside, etc. face challenge to maintain safe and hygienic environment zones where civic amenities are quiet deficient
3. Lack of infrastructure: The vendors and small FBOs lack infrastructure/ equipment such as refrigerators, hot case, warm and running water, adequate kitchen space, etc. to ensure safe food.
4. Water Quality: Street food vendors, kiosks, etc. use water provided by the municipal authorities and usually the quality of water is not potable making food prepared unsafe for consumption.
5. Lack of food hygiene and safety knowledge and training: Attrition is very high in this industry and also there is a good percentage of uneducated and unskilled staff, who have little knowledge of good hygiene practices and food safety regulations.
6. Multiple Registrations: Food businesses have to apply for multiple forms from various government agencies to start a business. The procedure for application is complex and cumbersome.

B. IMPLEMENTATION GUIDELINES

1. ESTABLISHMENT DESIGN AND FACILITIES

1.1 Location and Surroundings

The selection of the right location for the food facility is important to minimize any food safety risk and to ensure that neighboring industries and activities do not become a contamination source due to transferring hazards by air or water or increasing the risk of pest infestation.

- a) Ideally, the catering establishment shall be located away from any environmental pollution such as polluting industry emitting pollutants like smoke, dust and fumes, near dump yards, open grounds etc. Garbage dumps, industry pollutants and stagnant water in the vicinity encourage the breeding of rodents, flies and mosquitoes. Also, these conditions may lead to proliferation of microbes. Hence, it is important to keep area around catering establishment must be kept clean.
- b) In case the catering establishment is located in area prone to environmental contamination then adequate measures shall be taken to enclose and protect the premises from any possible environmental hazards. Few examples of protective measures are installation of rodent traps, air curtains, exhausts, etc.
- c) Generally, a minimum distance of 30 metres is recommended from potential sources of contamination. However, a greater or lesser distance could be accepted depending on specific site conditions.
- d) Roadways area within or around the premise should have a hard surface suitable for wheeled traffic to minimize dust contamination of foods.
- e) If the building is used for residential purpose also, then there should not be any direct access to the food premises. The activities should be compartmentalized if feasible to prevent cross contamination.
- f) The catering establishment shall be located away from flood prone area. Where the premises are located in areas prone to flooding, it is recommended that height of the establishment should be suitably elevated to prevent the risks due to flooding.

Special Cases: Pantry Kitchens (Railways), Event Catering

These catering establishments do not have fixed location for food preparation. Suitable measures should be taken to ensure that the food being prepared is protected from environmental contamination.

1.2 Premises and Rooms

1.2.1 Construction, design & layout

Properly designed and constructed food premises lessens the chances of contamination of food arising from unnecessary movement of food and employees within the premises, or the likelihood of insanitary processes being close proximity to sanitary operations. The layout of the premises should be such that there is no contamination in the food preparation area from pre and post food production.

The design and construction of food establishment should:

- a) Be appropriate for the activities for which the establishment is used;
- b) Permit the food premises to be effectively cleaned and disinfected.
- c) Help exclude dirt, dust, fumes, smoke and other contaminants;
- d) Not permit the entry and harbourage of pests;
- e) Provide a safe environment for workers and where applicable for customers.
- f) Food flow is in one direction (as far as possible); i.e. from receiving → to storage → to preparation → to cooking → to packaging /serving despatch.
- g) Adequate spaces are provided for food preparation, cooking and cooling, food storage, storage of equipment / utensils, installation of sanitary fitments, and cleaning facilities;
- h) Help in ensuring food or clean eating utensils are not conveyed through an open space or open yard that would expose food to contaminants.
- i) Incompatible areas or processes, particularly toilets, clean-up and chemical storage areas, should be separated from food preparation/processing areas.

1.2.2 Internal structures

This requirement applies to the floors, walls and ceilings of all areas used for food handling and associated activities such as storage and packaging. Areas used for food preparation, handling, and cleaning, sanitizing & personal hygiene.

a) Floors

- floors shall be made of impervious material. It is advised to have curved ends.
- floor must be tiled without gaps and well-sealed. It should be sturdy, easy to clean, non-absorbent, resistant to effect of hot water, sanitizers and detergents.

b) Walls and partitions

- shall be made of materials that are non-absorbent and washable
- walls shall have a smooth surface up to a height appropriate to the operation
- sealed to prevent the entry of dirt, dust and pests;
- easy to clean and does not harbour microbes

c) Ceilings and overhead fixtures

- Ceiling should be of continuous construction so that there are no empty spaces or wide joints. Although ceilings are less likely to require frequent cleaning, the surfaces should allow ease of cleaning.
- Ceiling in kitchens and food rooms should be of light colour and fire proof.
- The paint used for ceilings should be non-flaking
- Ceilings should be easy to clean.

False Ceiling

- a. False ceiling if used in food handling areas should have smooth, easily cleanable and impervious surfaces.
- b. Access openings to the space above false ceiling should be provided to facilitate cleaning and for detection of signs of pest infestation.
- c. Ceiling or the interior of the roof and overhead fixtures are to be constructed in a way that prevents accumulation of dirt. There should be adequate measures in place to reduce condensation and subsequent growth of undesirable mould.

False ceilings in the kitchens should be avoided.

- If used, clean rubber or plastic mats, excluding carpet or other similar floor coverings, should be designed for easy removal, cleaning and, if necessary disinfection.
- Absorbent material (e.g. cardboard, newspaper, sponge, unsuitable rubber mats) should not be used as floor material.

Temporary Flooring

Requirements as listed in 1.2.2 (a) should be taken into account while constructing temporary floors.

d) Windows

- shall be constructed to minimize the accumulation of dirt
- windows, roof vents or exhaust fans that open to the external environment shall be fitted with removable and cleanable insect-proof screens;
- where open windows would result in contamination, windows must remain closed and fixed during preparation of food.

e) Doors

- shall have smooth, non-absorbent surfaces
- shall be close-fitting and with suitable precautions to prevent entry of pests.
- In case of kitchens without doors, measures shall be taken to prevent entry of pests.

Exterior Openings

- a. Exterior openings should be protected against the entry of pests. Examples include:
 - filling or closing holes and other gaps along the floor, walls and ceiling;
 - solid, self-closing, tight-fitting doors; and
 - screen doors that open outward and are self-closing.
- b. If windows or doors are kept open for ventilation or other purposes, the exterior openings should be protected against the entry of pests by means such as screens, properly designed and installed air curtains or other effective means to restrict the entry of pests.
- c. Windows, doors and other openings should be constructed in a way that prevents accumulation of dirt.

f) Food contact surfaces (including working surfaces and surfaces of equipment)

- shall be in sound condition, and easy to maintain.
- shall be made of smooth, washable, corrosion-resistant, inert to detergents and disinfectants under normal operating conditions
- should be impervious and smooth and so designed that thorough cleaning is possible.
- painted or wooden surfaces are not recommended for preparation of food because it is difficult to maintain.
- canvas, cloth and other porous material, other than for single-service use, are prohibited as a food contact surface.
- cutting surfaces such as chopping blocks and chopping boards which are subject to scratching and scoring should be resurfaced if they become too difficult to be effectively cleaned and sanitized, and should be discarded if resurfacing is impossible.

1.3 Equipment & containers

1.3.1 Equipment and containers that come in direct contact with food and used for handling, storage, preparation, processing, packing and serving –

- a) shall be made of materials that are durable, non-corrosive, and smooth, with no toxic effect in intended use.
- b) shall permits necessary maintenance, they should be smooth, free from cracks and crevices, cleaning and disinfectant function as per its intended use and facilitates good hygiene practices inside the premise including monitoring and audit.
- c) shall at all times be either provided with fitted cover/ lid or with a clean gauze net or other material of texture sufficiently fine to protect the food completely from dust, dirt and flies and other insects.
- d) shall be placed to achieve an easy cleaning of adjacent areas like floors, walls, ceiling, and pest control.
- e) Equipment used to cook, heat treat, cool, store or freeze food should be designed to achieve the required food temperatures as rapidly as necessary in the interests of food safety and

suitability, and maintain them effectively. Such equipment should also be designed to allow temperatures to be monitored and controlled.

- f) where necessary, equipment is to be fitted with any appropriate control device to monitor and control the temperature.
- g) Equipment used in a food establishment should be suitably located or positioned so that it:
 - o is not exposed to any sources of contamination;
 - o can be maintained, cleaned and disinfected;
 - o can be inspected easily;
 - o may be properly vented when required; and
 - o is installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area.
- h) Equipment that is fixed (i.e., not easily moved) should be either:
 - o sealed to adjoining walls, floors and equipment; or
 - o spaced in such a manner to allow cleaning under and around the equipment.
- i) Containers being used for storage of chemicals etc. should be clearly marked and stored away from the food items.

1.3.2 Food control and monitoring equipment

- a) Equipment used to cook, heat treat, cool, store, freeze or serve food shall be designed to achieve the required food temperatures as rapidly as necessary to meet the food safety requirements, and maintain them effectively.
- b) Such equipment shall also be designed to allow temperatures to be monitored and controlled.
- c) Where necessary, such equipment should have effective means of controlling and monitoring humidity, air-flow and any other characteristic factor likely to have a detrimental effect on the safety or suitability of food.

1.4 Facilities/Utilities

1.4.1 Water supply

- a) Water for drinking, food preparation, dishwashing, cleaning equipment and surfaces directly/indirectly in contact with food, preparation of ice and steam should be of potable quality.
- b) Should be adequate and hot and cold running water should be available in the food preparation area.
- c) In absence of tap water, water should be stored in clean non-corrosive containers with tap. The water from potable sources only should be taken.
- d) When a storage tank is shared by several food establishments (such as in a mall), the food establishment should be able to show documented evidence that the water tank is cleaned as required.
- e) Non-potable water can be used for cleaning the exterior premises, in lavatories, cleaning of waste bins, etc.
- f) Drinking water coolers and dispensers shall be regularly cleaned and disinfected so as to keep it free of dirt and microbial contamination.

1.4.2 Drainage and waste disposal

Adequate drainage and waste disposal systems and facilities shall be designed and constructed so that the risk of contaminating food or potable water supply is avoided.

a) Drainage

- The drainage should be meet expected flow loads, constructed so as to prevent accumulation or back flow of waste water.
- The drain shall be easy to clean and inspect.
- Drains should be smooth preferably tiled in all three sides.
- The gradient should be at least one foot for every 100 feet in linear distance.
- The drain shall be covered in the food processing area with removable grills filters or any other removable fittings as the case may be.
- There shall be cockroach trap in all trapping area to prevent re-entry of pest from outer environment into food area. There shall be such traps of filters at the end of these drains at the landing end of these drains to prevent the re-entry of all these animals.

Exceptions for:

Event Catering: Arrangements must be made to achieve the same standards and to prevent stagnation of water.

b) Waste Disposal

- Containers for holding waste shall be in adequate size, made of impervious material, leak proof, clearly identified, easy to clean, and where necessary to disinfect shall be provided in the premises for collection of waste material.
- Waste bins shall be closed.
- Waste in food area should be segregated into wet and dry garbage.
- Waste disposal should be done through properly segregated colour coded bins namely., as 'WET', 'DRY' and 'OTHER MATERIALS'.
- It is a good practice to store recyclable materials must be stored separately.
- Wet garbage shall be removed from every food zone for every session to avoid cross contamination threats.
- It is preferable to have wet garbage with an in-liner of polythene or such polymer material which prevents leaks and stains in the holding container.
- It is highly recommended to have foot operated wet garbage bins in pre-preparation and production area.
- It is a good practice to store wet garbage if not disposed within 12 hours in a cold dry place to prevent the rate of microbiological digestion.
- Take care to remove garbage from food area through food trolleys in order to prevent spillage and decontamination.
- The garbage containers shall be cleaned washed and sanitized with 100 PPM chlorine.
- Waste bins should be cleaned thoroughly on regular basis.
- Waste disposal shall be done in accordance with the rules laid by local authority.

1.4.3 Cleaning

Adequate facilities shall be provided for cleaning food, utensils and equipment.

- a) There shall be a separate designated place for washing raw fruits and vegetables, washing utensils and equipments to prevent food contamination.
- b) There should be adequate supply of hot and cold water for washing utensils and equipment.
- c) The washing sink, taps etc. shall be made of corrosion resistant materials, the surface should be smooth and easy to clean.
- d) Adequate storage facilities should be provided as necessary stored away from food handling areas to store brooms, mops, pails, and cleaning compounds when not in use. Toilets should not be used for storing cleaning materials or equipment.
- e) Process for Cleaning and Sanitizing
- f) Cleaning is the process for removal of contaminants such as food residues, dirt, grease and bacterial film from a surface, which is achieved by the use of water and proper detergent. Thorough cleaning can be achieved by
 - **Pre-scraping** the utensils or surfaces and rinsing with clean water to remove most of the food residues, dirt and debris present
 - **Washing** with warm water and detergent by agitation to loosen the remaining food residue and dirt
 - **Rinsing** with clean water to remove the loosened food residues and dirt, and to get rid of the residues of detergent by clean water.

1.4.4 Personnel Hygiene Facilities

Personnel hygiene facilities shall be available to ensure that an appropriate degree of personal hygiene can be maintained to avoid any cross contamination. Such facilities shall be suitably located & designated.

a) Hand washing facility

- At least one hand wash station shall be provided in each food preparation area. Additional hand wash stations may be required depending on the type and extent of activity.
- Hand wash facilities shall:
 - be located to allow convenient access and use by food handlers and other workers;
 - be equipped with single-use liquid soap dispensers and paper hand towel dispensers;
 - provide an adequate flow of water at a suitable temperature (not too cold nor too hot);
 - be easily cleanable, and maintained in a clean and sanitary condition;
 - Indicated with clear signboards and not be used for purposes other than hand washing.

b) Toilet Facilities and Dressing Areas

- Adequate, suitable and conveniently located toilets should be provided for food handlers. The following criteria should be considered:
 - toilets should be conveniently located and accessible to workers during all hours of operation;
 - toilets should be completely enclosed and provided with a tight-fitting and self-closing door;
 - toilets should be equipped with a hand wash station; including a liquid soap and paper towel dispenser; have hand washing sign prominently displayed;
 - toilets should be easily cleanable, well ventilated, and well lit; and
 - toilets should not open directly into a food area where food or packaging material is stored, handled or packed;

- when adjacent to a food area, the toilet should be separated with a double door and ventilated space.
- Toilet rooms for the public, if provided, should be completely enclosed and separated from the food preparation and storage areas.
- Dressing and changing areas should be provided if workers routinely change their clothes in the food premises. Dressing and changing areas should be:
 - easily cleanable;
 - well ventilated and well lit;
 - provided with lockers or other suitable facilities for the storage of workers' possessions and uniforms;
 - Separate for male and female employees.

1.4.5 Lighting

- a) Lighting and lighting fixtures should be designed to prevent accumulation of dirt and be easily cleanable.
- b) Food establishment should be supplied with sufficient natural or artificial light to ensure the safe and sanitary production of food, and facilitate cleaning of the premises. Unless otherwise specified, the minimum lighting intensities should be:
 - 110 lux (at a distance of 89 cm (3 ft.) above the floor) in walk-in coolers, dry food storage areas, and in all other areas and rooms during periods of cleaning;
 - 220 lux (at a distance of 89 cm (3 ft.) above the floor) in areas where fresh produce or packaged foods are sold or offered for consumption; areas used for hand washing, ware-washing, and equipment and utensil storage; and in toilet rooms; and
 - 500 lux at the surface where a food handler is working with unpackaged high risk foods or with food utensils and equipment such as knives, slicers, grinders or saws where employee/worker safety is a factor.
- c) Except as otherwise specified, lighting fixtures should be shatter proof or be shielded with shatterproof coverings in areas where they are exposed to food, equipment, utensils, linens or unwrapped packing materials. Shielded lighting is not necessary in areas used only for storing food in unopened packages or where the food cannot be affected by broken glass falling onto it.
- d)

Recommended Levels of illumination

Activity	Level of luminance(lux)
Food and equipment storage areas	110-150
Retail, dishwashing, handwashing, toilet areas	200-300
At food preparation surfaces	500
For reading, inspection and monitoring equipment (by provision of local lighting)	600-1200



1.4.6 Storage facilities

- a) Food establishments require adequate storage facilities for all items required for operation, including food, food ingredients, equipment, and non-food materials such as utensils, linens, single-service and single-use articles, packaging, and chemical agents. During storage, food items shall be protected from contamination such as water leakage, pest infestation or any other insanitary condition.
- b) The following criteria should be applied to all storage areas:
 - adequate shelving should be supplied in order that all materials may be stored off the floor. All food and food items and equipment should be stored at a minimum of 15 cm (6 in.) off the floor on racks, shelves or pallets. Shelving which is not sealed to the floor should have a clear vertical space of at least 20 cm between the bottom shelf and the floor to facilitate cleaning. Wide shelving units should be at least 20 cm or more away from the walls to allow for access for cleaning, and permit easier visual inspection;
 - shelves should be constructed of materials which are durable and easily cleaned.
- c) The facilities used for the storage of food, food ingredients, equipment and packaging should be designed and constructed so that they:
 - are cleanable;
 - are located in a clean and dry location;
 - restrict pest access and harbourage;
 - provide an environment which minimises the deterioration of stored materials; and
 - protect food from contamination during storage.
- d) The facilities used for the storage of food, food ingredients, equipment and packaging materials should not be located:
 - in areas used for the storage of soiled or contaminated objects and materials;
 - in locker rooms, toilets, garbage or mechanical rooms;
 - under sewer lines that are not shielded to intercept potential drips; or
 - in the same room/vicinity as chemicals/pesticides.
- e) Non-food agents such as disinfectants, detergents, pesticides and other similar products shall be stored separately in a lockable area that prevents the potential for contamination of food, food ingredients, food contact surfaces and non-food materials such as utensils, linens, single-service and single-use utensils, and packaging materials.
- f) Personal belongings and uniforms of employees should be stored separately from food storage and food preparation areas.

1.4.7 Air circulation and ventilation

- a) The air shall not flow from contaminated to clean areas. For this, natural /mechanical ventilation systems including air filters, exhaust fans, should be provided.
- b) Ventilation systems should be designed and installed such that:
 - they are sufficient in number and capacity to prevent grease or condensation from collecting on the walls and ceiling;
 - the filters or other grease extracting equipment are easily removable for cleaning and replacement if not designed to be cleaned in place;

- the exhaust ventilation hood systems include components such as hoods, fans, guards, and ducting which will prevent grease or condensation from draining or dripping onto food, food contact equipment or surfaces, utensils and linens, or single-service and single-use articles.

Note: It is better to ensure a gap of 1.5 to 2 feet between fresh air flow to exhaust. It's even better if fresh air flow is behind the food handler is facing the range.

No air flow from butchery should flow directly in to any other area.

Exhaust fans if attached to walls at certain food areas must have grill and mesh to prevent inflow of pest or entry of rodents in to food area.

Chapter II

ESTABLISHMENT – CONTROL OF OPERATIONS

All food establishments should implement and maintain an approved food safety programme that is documented and that identifies and controls food safety hazards.

A food establishment should:

- Systematically examine all of its food handling operations in order to identify the potential hazards that may reasonably be expected to occur.
- Develop and implement a food safety programme to control the hazard or hazards if one or more hazards are identified in accordance with paragraph (a).
- Set out the food safety programme in a written document and retain that document at the food establishment.
- Comply with the food safety programme; and conduct a review of the food safety programme at least annually to ensure its adequacy.

Review the system and make necessary changes to it when any significant modification is made to the product, process, or any step, or in the event of a justified food complaint or food related incident.

2.1 Food Receipt (Procurement of raw materials and ingredients)

- a) Receiving area must be separated by means of partition or temporary arrangements to restrict environment impact of pollution and cross contamination.
- b) In case of small organisations, if same area is used for various activities then care should be taken that the area is kept clean at the time of receiving food products and no other activity is performed during that time.
- c) In case of temporary or mobile premises, where the receiving area is not separate then there shall be a separate platform identified which is designated only for receiving food products
- d) The area must have a strict cleaning and sanitation schedule before and after receiving food items. The receiving area shall be kept clean and sanitized before receiving food products. The

receiving area should have a proper pest and rodent control system. E.g. installation of air curtains to prevent entry of flies, etc.

- e) All packaged raw materials, food additives, colours etc. being purchased as a raw material or direct consumption shall be purchased from a FSSAI licensed/ registered vendor should conform to FSSAI standards or guidelines.
- f) Where possible, the competence of supplier to deliver and handle food should be checked especially in case of high risk foods. The supplier shall provide a Certificate of Analysis and preferably a Certificate of Guarantee to the food business (Form E) which states that the food being supplied conform to FSSAI standards. *An illustrative copy of Form E is provided in the "Proformas" section.*
- g) All the packaged produce being received shall be check for its quality. Check of the expiry/ best before date, packaging integrity, storage condition and temperature, etc. to ensure the quality of product.
- h) Only fresh farm produce such as fruits and vegetables, etc. being purchased from vendors in *mandis*, or directly selling from farms may be exempted for not having FSSAI licence. Such produce should be checked thoroughly to ensure there is no spoilage, bacterial or fungal infestation. E.g. Leafy vegetables should not be tied with jute rope, the leaves should not be wilted and should be fresh. Similar check should be made for all raw produce being received.
- i) Always ensure that the quantity of food products received is in alignment with the immediate requirement and storage facility available.

Note: Vegetables and fruits maybe coloured using artificial non-food paints and colorants. To check whether the vegetable or fruit is coloured or not, take a piece of tissue and spray some alcohol on it, now rub it on the piece of vegetable or fruit, if the vegetable or fruit is coloured artificially then the colour will come off on the tissue paper.

- j) Receiving time must be designed to segregate veg, non-veg and non-food items. For example Vegetarian and non-vegetarian products must not be received together. Receiving area must be clean and sanitized after receiving meat products to avoid cross contamination. Also, receiving meat and sea food together shall be avoided. In case these products are being received at the same time then it must be ensured that they are kept in separate packaging and not coming in contact with each other. Also, it is ideal to receive food and non food products separately.
- k) It is important to maintain the temperature of food products while supplying and receiving. Ensure that all receiving temperature of potentially high risk food should be at or below 5°C and receiving temperature of frozen food should be -18°C or below.

- l) The containers, equipment being used for receiving food products should be clean and sanitized. The containers for vegetarian and non-vegetarian food products should be separate and preferably colour coded. No same knife, spoon, thermometer should be used for vegetarian and non- vegetarian products. They should be cleaned and sanitized after each use.
 - o *Trolleys handling coal, garbage or other items shall not be used for transporting food.*
- m) Also it is advisable to appoint a designated food handler must be present with awareness of FSMS/FSSAI regulations esp. during receiving of high risk items like meat, fish, poultry and dairy products.
- n) The FBO should have procedures in place to confirm that the incoming food materials meet the documented specifications (for example visual inspection upon receipt, certificate of analysis, laboratory testing, review of label for allergens, supplier control).
- o) Records showing the dates, descriptions, quantities and sources / destination of supply should be kept and well maintained for audits. Temperature monitoring of all perishable and high risk items must be done for every batch of receiving and a record shall be maintained.
- p) Food items being rejected should be returned to the supplier at the time of receiving, if that is not possible then the rejected food products should be stored separately. There shall be a record of rejected material indicating reasons for rejection thereof.

2.2 Food and packaging materials storage

The storage facilities shall be designed and constructed to avoid cross-contamination during storage, permit adequate maintenance and cleaning and shall avoid pest access and accumulation. Cold Storage facility shall be provided for food that requires being stored below 5°C and for storing frozen foods below -18° C.

While designing the storage room, segregation shall be there for raw, processed, packaging, rejected, returned or recalled food items, allergen material & distinguishably marked and secured products (hardware & cleaning chemicals). The storage area for raw food shall be separate from the area of work-in-progress, processed, cooked and packaged products. Also, the containers made of non-toxic materials shall be provided for storage of raw materials, work-in-progress and finished / ready to serve products.

- a) Food business shall store food and packaging materials in appropriate areas for effective protection from dust, condensation, drains, waste and other sources of contamination during storage. Packaging material storage room for storing should be closed from all sides to restrict entry of flies, rodents, birds, insects/pests etc.

- b) **Dry Store-** Storage area should be kept clean, dry , well ventilated and properly lit The should be no gaps or cracks in the walls , ceilings or floor as these can lead to pest harbourage. The walls and ceilings should be kept clean and maintained. There should be no flaking of paint or cobwebs. There should be a proper pest control program that should be repeated every 15 days. There should be an insect bait diagram developed for each store.
- c) The packed food materials/ ingredients shall be stored on racks/ pallets such that they are stored 3-4 inches off the floor on pallets and at least 12 inches off the walls to ensure easy and adequate cleaning and prevent harbouring of any insects, pests or rodents.
- d) All raw materials, food additives and ingredients shall be stored in separate areas from packaging materials, stationery, hardware and cleaning materials.
- e) High risk foods shall be stored at or below 5°C or at or above 65°C. Frozen food, if they are intended to be stored in frozen state shall be stored at -18 ° C or below. Preferably there should be a separate chiller/ refrigerator and freezer for vegetarian and non-vegetarian products.

Note: Sequence of storing food in case of a common refrigerator

<i>Top:</i>	<i>Salads</i>
	<i>Milk and dairy</i>
	<i>Cooked Vegetables</i>
	<i>Cooked meat</i>
<i>Bottom:</i>	<i>Raw Meat</i>

All food being stored shall be kept covered with food grade lid or food grade cling film. It is important to remember that all plastic cling wraps available in market are not food grade. Only food grade cling wraps should be used.

- f) If any food product that needs to be transferred into another container shall be transferred in a way that the food is not contaminated in the process.
- g) Only food grade containers shall be used for storing food products. These containers should be kept clean and sanitized before transferring the food product. It is a bad practice to use empty container of one food product to store another food product without cleaning it.
- h) The storage of raw materials, ingredients, work-in-progress and finished packed products shall be subjected to *FIFO (First in First out)*, *FEFO (First expire First out)*.

Note: FIFO stands for First in First Out – The food that has been received first or earlier should be consumed first.
FEFO stands for First Expire First Out – The food which will expire first will be consumed before the food which have expiry later.

- i) If any ingredients contain allergens such as groundnut, soy, etc., the same should be clearly identified and stored to prevent cross-contamination.
- j) Proper date and time tagging of food products being stored should be done. This will ensure proper stock rotation and prevent spoilage of food.

- k) There should be a mechanism to indicate slow moving and fast moving items to the core process operation team enabling timely usage of items.
- l) The stores should be restricted to visitors and be in lock and key in non-operating hours.
- m) The packaging material being stored shall be stored in a separated designated area. It should be prevented from dust, etc.
- n) Chemicals used for cleaning, pest control, etc. shall be stored in a separate store and kept locked to prevent any chances of contamination of food products. It is advisable to avoid using empty containers and labelled.

2.3 Pre-preparation

- a) Pre preparation area must be clean, well lit and, well ventilated. Pre-preparation must be well segregated into dry and wet zone.
- b) Pre-preparation must be well segregated into dry and wet zone. All contact surfaces in pre preparation must be pre sanitized. Vegetarian cutting boards must be sanitized with 50 ppm chlorine and non-vegetarian cutting board with 100ppm chlorine with a minimum contact of 2-3 hours.
- c) Only potable water must be used for washing of the vegetables, fruits, soaking of grains, etc.
- d) It is important to use separate colour coded chopping boards, knives for following to prevent cross contamination:
 - o Vegetarian and Non-Vegetarian Food
 - o Raw and Cooked Food
 - o Meat and Sea Food

Note: *Suggested Color Code- Have at least 2 chopping boards (Red and Green for vegetables and non-vegetarian) but is preferable to a detailed color code.*

- *Red for meat and poultry*
- *Blue for Raw fish and shellfish only*
- *Grey for Raw unwashed vegetables and fruits only*
- *Yellow Ready to Eat and Cooked Foods*
- *Green for vegetables*
- *White for bakery and milk products*

- e) Surfaces that comes in contact with food which include chopping boards, knives, peelers, utensils, etc. shall be cleaned thoroughly and if necessary, disinfected after using appropriate sanitisation techniques. Vegetarian cutting boards shall be sanitized with 50 ppm chlorine and non-vegetarian cutting board with 100ppm chlorine.

Note: **How to prepare chlorine solution of required strength –**

Formula used – Initial Hypo chlorine solution concentration (ppm) x Initial Hypo chlorine solution volume (? In ml) = Final chlorine solution concentration desired (ppm) x Final chlorine solution volume (ml)

Example – To prepare 100 litre (100,000 ml) of 50 ppm solution, from a 12.5% (125,000 ppm) sodium hypochlorite (NaOCl) solution

$$125000 * ? = 100000 * 50$$

? = 40 ml of Initial Hypo chlorine solution volume shall be used.

Note - 1 litre = 1000 ml & 1 ppm = 1ml in 1,000,000ml

- f) High risk foods like meat, fish and poultry shall be handled in an exclusive Butchery under air conditioned temperature.
- g) High risk perishable vegetarian and dairy products shall be handled in air conditioned temperature.
- h) Pre-prepared wet items like pastes or chutneys must be date tagged with time before storing them for later use.
- i) Ensure that No two batches meant for process at different times should be mixed in the same tray
- j) Pre-prepared food should be kept in clean and covered containers and should be date and time tags to unsure FIFO and FEFO is followed.
- k) During preparation and handling of high risk foods at ambient temperature. It is strongly recommended that areas used for preparation of cold high risk foods should be maintained at 20°C or below to minimise bacterial multiplication.
- l) Thawing
- Frozen foods should be thawed quickly in a manner that will prevent the rapid growth of pathogenic and spoilage bacteria. During the process of thawing, the microbiological count should not exceed the limits specified in the relevant product standard as per FSSAI.
 - **Thawing in Refrigerator:**
 - o Thaw food at 5°C or less.
 - o Items being thawed should be labelled with date and time.
 - o If ante room of freezer is used for thawing, such rooms shall not be used for any other things.
 - **Thawing in running water**
 - o It is advisable for shell fish and sea foods.
 - o Thawing in running water should not exceed 90 minutes.

- Also, ensure air breaker between tap and water.
- Sink must not be used for other purposes during thawing.
- Cold running water from mains should be at 15°C or less.

- g) After thawing product must be used within 12 hours.
- h) The area shall be free of pests and shall be protected from rodents.

Item: _____ Intls: _____			CM
Action	Date	Time	
Pull		AM	
		PM	
Thaw		AM	
		PM	
UseBy		AM	
		PM	

Note: Items being thawed should be labeled with defrost date to indicate the beginning of second shelf life.

2.4 Preparation

- a) Preparation area should be clean and ventilated. In case any cooking/frying is to be done then proper outlets for smoke/steam etc. like chimney, exhaust fan etc. shall be provided.
- b) Since harmful contaminants can't be seen, smelled or tasted, it's important that you cook your food to a safe internal cooking temperature to avoid food poisoning. The time and temperature of food preparation should be sufficient to reduce food borne pathogens that may be present to an acceptable level. Also, it is crucial to ensure that the food is thoroughly cooked not only on surface but to the core. Following are the food core temperatures and time for cooking vegetarian and non-vegetarian foods.

S.No.	Type of Food	Time and Temperature
1.	Vegetarian food	60°C for 10 minutes or 65°C for 2-minute
2.	Non vegetarian	65°C for 10 minutes or 70°C for 2 minutes or 75°C for 15 seconds

c) Microwave Cooking

Raw Animal Food Being cooked in a microwave oven should be:

- Rotated or stirred throughout or midway during cooking to compensate for uneven distribution of heat
- Heated to a temperature of at least 75°C for 15 seconds.

- Allowed to stand covered for a minimum of 2 minutes after cooking to obtain temperature equilibrium.
- d) Use only clean food grade equipments to during food preparation or cooking. Also, while food preparation ensure that food is not being contaminated by foreign matter.
- e) Allergenic Contamination: Certain people can be allergic to one kind of food product. Some of the commonly known allergens are milk, cereal grains such as wheat, maize, nuts, etc. Consumption of these food products by an allergic person may leads to a reaction in body.

Note: Possible cross contaminations that can occur if the restaurant staff does not have the appropriate knowledge or training:

- Picking nuts off a salad thinking it will be safe.
- Thinking the temperature of the frying in oil destroys allergens.
- Taking a spoon used to serve cream soup and stirring milk-free soup.
- Chopping nuts and a salad on the same chopping board.
- Sharing mixers, pans, etc., in preparation of multiple foods.

- It is always preferable to mention most common allergenic ingredients being used in from of the food item in menu.
 - Also, while preparing food free from allergenic substance proper care shall be taken to prevent any kind of contaminations.
 - Labelling of allergens on packaged food or food being delivered should also be done.
 - Consumer must be informed in case the product cannot be avoided or cross contact cannot be prevented.
- f) Cooked or semi processed high risk food that is to be refrigerated shall be cooled:
- within 2 hours or less from 60°C to 21°C
 - within a further 4 hours from 21°C to 5°C.

This food shall be consumed within 24 hours of preparation.

Note: Some effective ways to cool food rapidly

- *Reduce the volume of food by dividing it into smaller portions and/or placing it in shallow containers*
- *Cut large joints of meat and poultry into smaller chunks*
- *Ensure there is space around food containers so that cold air in the refrigerator can circulate freely.*

- g) Only packaged oil from a FSSAI licensed manufacturer shall be used in food preparation. Not all kinds of fats are suitable for cooking, it is important to ensure that the oil or fat being used is suitable for frying operations. E.g. Salad oils cannot be used for frying.
- h) Frying of oil leads to generation of free radicals in oil (these are harmful to health). It is important to assess the quality of oil being reused for frying to ensure that oil is safe. Fat and

oil quality should be verified periodically by checking the colour, the flavour and floated elements.

Note: An easy way to check quality of oil

Take a pH paper and dip it in oil, if color turns yellow to orange, then the oil is unfit for use.

2.5 Reheating

- a) Reheating of food should be done using direct methods such as heating on stove on stove or using a microwave. The food shall be uniformly heated for contact time of minimum 2 minutes.
- b) No indirect heating method such as in bain marie, by adding hot water, keeping food under the lamp is acceptable.
- c) High risk foods such as meat, poultry, fish and gravies should be reheated only once and consumed. The leftovers after that shall be discarded.

2.6 Food Display and Service

2.6.1 Portioning of food

- a) Food shall be portioned in safe and hygienic conditions. The area being utilized for food portioning shall be clean.
- b) The equipment being used for portioning such as spoons, ladles, knives, chopping boards, etc. shall be clean and sanitized. Separate equipment and cutlery shall be used for each food product being portioned.
- c) Food portioning at room temperature shall finish within 30 minutes. Larger portions where food cooked and refrigerated cannot be divided within 30 minutes then portioning shall be carried out in an area with temperature 15⁰C or below.
- d) High risk foods shall be portioned in the refrigerated area as they are at a risk of getting spoilt quickly.
- e) Ideally, portioned food should be served immediately or stored at 5⁰C or below.

2.6.2 Food Display

- a) Food display area should be kept clean and well maintained.
- b) Packaged food must be securely wrapped and unpackaged ready to eat food must be covered with lid or protect with food guards.
- c) Appropriate measures such as display gauges, etc. should be used to protect contamination by customers
- d) Ensure the food is displayed in food grade containers. Separate and suitable utensils are being used for effective dispensing and avoid cross contamination. No direct handling of ready to eat food with bare hands is permitted.
- e) Serving spoons etc. should be replaced regularly with clean ones.

- f) Food handlers should effectively monitor the safe food handling procedures
- g) High risk food should be displayed at 5°C or below or at 65°C and above.
- h) Hot food should be kept in heating containers. Ideally, food should be displayed in small portions that can be refilled. Temperature should be monitored at regular intervals
- i) Cold food should be kept in refrigerators or ice during display. Refrigerators and chillers should have a temperature display to ensure that temperature is being maintained.
- j) Food intended to be frozen to be displayed at -18oC or below.
- k) Hot food being kept at a temperature below 65oC must be consumed within 2 hours. If not, then must be reheated to 75oC for a minimum contact time of 2 minutes and may be consumed. Such food shall not be reheated/ consumed after 2 hours.
- l) Cold food can be kept above 5o C but below 10 OC for up to 2 hours but this can be done only once. If any food is left after this, it shall be discarded.
- m) Dry savouries can be at displayed at room temperature with the indication of use by date visible to consumers.
- n) Disposable serving plates, cutlery, serving spoons, etc. shall be of food grade quality. These items should be stored in clean containers to avoid contamination.
- o) Dispensing containers and accompaniments at dining service such as salt, pepper, ketchup and sauces should be kept in clean food grade containers. These containers should be cleaned regularly, also at the time of refill. The food should be protected from contamination.
- p) Anything that is given as mouth freshener or pan or *supari* must comply with standards in the regulation and if it is an out-sourced prepacked item, it shall be a licensed or FSSAI registered product.

2.7 Food Packaging and wrapping

- a) The packaging design and materials shall provide protection for products in order to prevent contamination, damage and accommodate required labelling as laid down under the FSS Act & Regulations there under.
- b) Only Food grade packaging materials shall be used. Packaging materials like aluminium, tin and plastic shall conform to BIS standards as mentioned under the FSS Regulations.
- c) The food packaging materials shall be inspected before use to prevent using damaged, defective or contaminated packaging, which may lead to contamination of the product.
- d) The food business operator shall have effective procedures in place to confirm that contaminated, damaged or defective reusable containers are properly cleaned and sanitized, repaired or replaced, as appropriate, before re-use.
- e) Wrapping and packaging operations shall be carried out in a hygienic manner so as to avoid contamination of the products. First In First Out or First Expiry First Out approach shall be followed. To meet this, adequate stock rotation to be followed.
- f) Packing room should be air conditioned in case of cake or pie (preferably maintained at 22 – 30°C).

- g) Use of staple pins, strings, rubber bands should be avoided. Glue, if used, should not come in contact with the food product, & in case it comes in contact, it shall be food grade.
- h) Reusable packaging, if used, shall be suitably durable, easy to clean & where necessary, disinfect. It shall not have been used for packaging non – food products.
- i) Any form of newspaper/ printed paper (non-food grade) should not be used to serve or pack food.

2.8 Food Transportation

- a) Conveyances &/or containers used for transporting food stuffs shall be designed and constructed to permit adequate cleaning &/or disinfection. They shall be kept clean & maintained in good repair condition to protect food stuff from contamination. Identification of an appropriate supply chain shall be done having the provision of minimizing food spoilage during transportation.
- b) Any transport of food like carrying raw materials into the food zone or movement of semi processed or processed items within the food zone or transport of prepared food from one place to another shall be protected from pests, foreign matter contamination and environmental pollution.
- c) Equipment, container etc. coming in direct contact with food should be constructed with non-toxic, food grade materials, which shall also be easy to clean and maintain.
- d) High risk food shall reach the point of consumption within 2 hours of preparation and should be consumed immediately.
- e) If not intended to be consumed immediately or where food is to be transported over longer periods of time, then the temperature during transport shall be maintained at 65^oC. Alternatively, the food shall be first chilled to 5^oC or below and then transported with the temperature during transport maintained at 5^oC or below.
- f) All high risk food required to be served in chilled condition must be maintained during transport at 5^oC or below. If transported at normal temperature, then the food shall be consumed within 4 hours.
- g) All frozen items must be taken only in freezer or such ice boxes maintaining required temperature i.e. -18^o C or below.
- h) Temperature should be monitored at regular intervals.
- i) No trolley, tub or container which is used for carrying any other material like garbage, coal, chemicals, engineering or other supplies shall be used for transport of food materials.
- j) Food vans of caterers must be covered and should have proper locks to prevent entry of rodents and pests and be protected against any other threat to food safety during transport.
- k) Food and non-food products transported at the same time in the same vehicle shall be adequately separated (eg. Wrapped and packed) to ensure that there is no risk of food spillage or contact that may contaminate the food.
- l) If different types of food are transported within a vehicle, precaution should be taken to avoid cross contamination. For example, if both raw meat and ready to eat food are transported at

the same time, they should be wrapped or kept separate covered and placed so that no cross contamination occurs.

- m) No food should be used if transport is got stuck in flood or if there is a leak from the roof of such transport due to rain.
- n) Food transport vehicles shall not be parked in areas of public sewage or near industrial effluents pools or where there is likelihood of industrial emission entering such vehicle.

III. ESTABLISHMENT – MAINTENANCE & SANITATION

3.1 Cleaning & sanitation

- a) Food premises & equipment should be of hygienic design and shall be maintained in an appropriate state of repair (such as no flaking paint or plaster, no broken tiles) & cleanliness.
- b) Ensure all equipment, utensils and food contact surfaces should be cleaned and sanitized thoroughly before start of operation. For eg. Proper sanitation of fermentation chamber or premise will help to eliminate microbes in the product.
- c) Cleaning and sanitizing equipment should be designed for its intended use and should be properly maintained.
- d) Cleaning program shall remove food residues and dirt which are source of contamination. Cleaning can be carried out by the separate or the combined use of physical methods, such as heat, scrubbing, turbulent flow, vacuum cleaning or other methods that avoid the use of water, and chemical methods using detergents, alkalis or acids.
- e) A cleaning and disinfection program shall be drawn up, observed and records of the same shall be maintained. The programme should ensure that all parts of the establishment are appropriately clean, and should include the cleaning of cleaning equipment. The operator shall implement a written cleaning program which specifies:
 - areas, items of equipment and utensil to be cleaned;
 - the person or people responsible for particular tasks;
 - the frequency of cleaning;
 - the procedures for cleaning and sanitizing, including disassembly and assembly instructions; and
 - monitoring arrangements for checking effectiveness of cleaning (eg. Through audits or microbiological sampling and testing of the environment and food contact surfaces)
- f) Cleaning procedures should involve, where appropriate:
 - removing gross debris from surfaces;
 - applying a detergent solution to loosen soil and bacterial film and hold them in solution or suspension;
 - rinsing with water which complies with section 4, to remove loosened soil and residues of detergent;

- dry cleaning or other appropriate methods for removing and collecting residues and debris. For E.g. Dusters/cleaning clothes should not have loose threads & preferably be double stitched from all sides. Also, to remove crumbs and burnt product blow drying is a suitable process;
 - where necessary, disinfection with subsequent rinsing unless the manufacturers' instructions indicate on scientific basis that rinsing is not required.
- g) Cleaning chemicals shall be food grade, handled and used carefully, in accordance with manufacturer's instructions. It should be ensured that cleaning & sanitizing chemicals do not contaminate food or packaging material during or after cleaning and sanitizing. Ensure clear identification of containers containing cleaning chemicals.
- h) Special sanitation and housekeeping procedures required during manufacturing, storage, distribution and handling should be specified within the document (for example, removal of product residues during breaks, glass breakage procedures).

3.2 Maintenance

- a) Preventive maintenance of equipment & machinery shall be carried out regularly as per the instructions of the manufacturers.
- b) Preventive maintenance (including calibration) programme must include all devices used to monitor &/or control food safety hazards & cover the maintenance procedure, frequency & identification of the person (&/or external agency) responsible activity.
- c) Corrective maintenance shall be carried out in such a way that production on adjoining lines or equipment is not a risk of contamination.
- d) Temporary fixes when used shall not put product safety at risk & should be removed/permanently fixed in a timely manner.
- e) Lubricants, heat transfer fluids or any other similar material used shall be of food grade where there is risk of direct or indirect contact with the product.
- f) Conduct regular inspections and maintenance of equipment's. Promptly repair or replace damaged equipment to prevent contamination, such as sieves for sieve integrity.

3.3 Pest Control Systems

- a) A pest is any living organism that causes damage/discomfort to material & humans or transmits/produces diseases.
- b) The Food Business Operator shall implement an effective pest control program for the premises & equipment. This program shall prevent the entry of pest; detect and eliminate any pests which may gain entry. It shall include the placing of detectors and/or traps in key locations to identify pest activity. A map of detectors and/or traps shall be maintained. Detectors and/or traps shall be designed and located so as to prevent potential contamination of materials, products or facilities.

The program should consist of:

- the person who is assigned responsibility for pest control;
- the name of the pest control company or the name of the person contracted for the pest control program, where applicable;
- the list of chemicals used, their concentration (in accordance with label instructions), and the location, method and frequency of application;
- a map of the location of pest control devices that are monitored; and
- the type and frequency of inspection to verify the effectiveness of the program.

c) Pesticides used shall be registered under the **Pest Control Products Act and Regulations**. Chemical treatment of equipment, premises or ingredients to control pests should be as per label instructions.

d) They should also be applied so that the maximum residue limit specified in the Food and Drugs Act and Regulations is not exceeded. Records of pesticides / insecticides used along with dates and frequency shall be maintained. Poisonous rodenticides shall not be used within the premises. Pest control is done through **4D's approach** –

<p><u>1D – Deny Entry- Preventing Entry</u></p> <ul style="list-style-type: none"> • Seal all holes, crevices at ceilings, walls and floors • Threshold clearances of doors < 6mm, fix metal kicking plates • Double door / air curtains / strip curtains / mesh screens, self-closing doors at appropriate locations Missing / damaged gratings of drains installed / replaced 	<p><u>2D – Deny Shelter – Elimination of Harborage of Pests</u></p> <ul style="list-style-type: none"> • Avoid False sealing in processing and storage area • Repair defects on walls, floors, ceilings, woodwork & other structures • Remove disused / obsolete articles from food premises 	<p><u>3D – Deny Food- Eliminate food sources to pests</u></p> <ul style="list-style-type: none"> • Store all foods and condiments in sealed / covered containers • Floor free from food remnants • Prohibit preparing food and utensils cleaning at other places • Store refuse in dedicated closed container and discard periodically to prevent accumulation. • Surface channels and gratings clean and clear of food remnants 	<p><u>4D – Eradication of Pests</u></p> <ul style="list-style-type: none"> • Clean & disinfect pest infested places, clothing and equipment • Use Insectocuter – Place 4.5 to 6 m away from food handling area • Use low wall mounted insectocutors • Clean insectocutor every week • Cover all foods during Pest control treatment • Use glue pads inside and rodent boxes outside the processing areas • Pest or chemical contaminated food be discarded.
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3.4. Waste disposal management

- a) Food waste, non-edible by product & other refuse shall not be allowed to accumulate in food handling or storage areas. It shall be removed periodically with a minimum daily removal so as to avoid accumulation & overflow in food handling, food storage, other working areas & adjoining environment.
- b) Labelled materials, products or printed packaging designated as waste shall be disfigured or destroyed to ensure that trademarks cannot be reused.
- c) Removal and destruction should be carried out by approved disposal contractors. The organization should retain records of destruction.
- d) Disposal of sewage & effluents (solid, liquid & gas) shall be done in conformity with specified requirements of factory act/ state pollution control board.

- e) Waste stores and dust bins must be kept appropriately clean, free of pests and in closed conditions and shall be disposed as per local rules and regulations including those for plastic and other non- environment friendly materials.

IV. ESTABLISHMENT – PERSONAL HYGIENE

4.1 Health Status

- a) Food handlers shall undergo a medical examination by a registered medical practitioner annually to ensure that they are free from any infectious & other communicable diseases. A record of these examinations shall be maintained.
- b) Food handlers shall be inoculated against the enteric group of diseases as per the recommended schedule of the vaccine & records shall be maintained.
- c) Medical examination to be concluded includes –
- Physical examination
 - Eye test
 - Skin examination
 - *Compliance with Schedule of vaccine to be inoculated against enteric group of disease.
 - Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from, on clinical examination.

**Vaccine to be inoculated against enteric group of disease shall be decided by the medical practitioner according to the list as declared by the municipal corporation of that area.*

- d) Record of medical examination shall be maintained in the prescribed performa.

4.2 Illness & injury

- a) Food handlers suffering from of a disease shall not be allowed to handle food or material which comes in contact with food.
- b) Employees shall report the following conditions to the supervisor for possible exclusion from food handling areas - Jaundice, diarrhoea, vomiting, fever, sore throat with fever, visibly infected lesions, boils, cuts or sores & discharge from ears, eyes or nose.
- c) Medical examination of a food handler shall be carried out apart from the periodic medical examination, if clinically or epidemiologically indicated.
- d) Personnel with open cuts, wounds or burns shall be required to cover them with suitably water proof dressings before starting operation. Any lost dressing must be reported to supervisor immediately.
- e) The dressing should preferably be of bright colour & metal detectable.

4.3 Personal cleanliness

- a) Food handlers shall maintain high degree of personal hygiene.
- b) They shall wear work clothing, head covering & footwear that is fit for the purpose, clean & in good condition (free from tears, rips or fraying material).
- c) Work wear shall provide adequate coverage to ensure that hair, beard, perspiration etc. cannot contaminate the product. Work wear should be free from buttons, with outside pockets above waist level. Zips or press stud fastenings are acceptable. They should be laundered to standards and at intervals suitable for the intended use of the garments. Head cover should be worn first & footwear at the last, followed by sanitization.
- d) Protective clothing mandated for the food production areas shall not be used for any other purpose. Protective clothing includes – hair net, moustache net, glasses, ear plugs, gloves, aprons, foot wear. The aprons & dresses of food handlers kept in an ozonized cabinet or UV induced cabinets when handling sensitive products like pies, cakes.
- e) Where gloves are used for product contact, they shall be clean & in good condition. Working without gloves can be done provided there are necessary controls on periodic usage of disinfectants at work section & nature of the product being handled.
- f) Hair shall be kept neatly tied & finger nails shall be kept trimmed. The food handlers shall prohibit the use of nail polish, false nails and false eyelashes; carrying of writing implements behind the ears. No strong perfume/lotion should be applied.
- g) Shoes worn outside food handling area shall not be allowed to enter food handling area. Shoes for use in processing areas shall be fully enclosed and made from non-absorbent materials. Street shoes either shall be changed or covered using foot cover.
- h) All people entering the food handling area shall wash their hands. Hand-washing notices should be posted in appropriate areas. Hands shall also be washed after –
 - handling non - food chemicals.
 - handling incompatible food products (such as raw versus cooked food) or contaminated material.
 - breaks
 - coughing or sneezing or blowing their nose.
 - using toilet facilities.
 - using cell phones
 - smoking
- i) As a good practice, cell phones should be used as minimum as possible (especially in high risk areas) as they are also a source of contamination. Food handler should not handle soiled currency notes/cards to avoid contamination.
- j) Food handlers shall pass through air curtain to remove any lint or hair while leaving the changing room.

4.4 Personal Behaviors

- a) All food handlers shall follow a good personal behaviour. Any behaviour or unhygienic practice which could result in contamination of food shall be prohibited in food handling areas. It includes –
- b) Smoking
 - Chewing
 - Eating
 - Unprotected sneezing or coughing
 - Spitting
- c) Food handlers shall avoid certain hand habits such as scratching nose, running fingers through hair, rubbing eyes, ears & mouth, scratching beard or part of bodies. When unavoidable, hands shall be effectively washed before resuming work after such actions. Personal effect such as jewellery, watch, pins or other items should not be worn or brought into food handling areas if they pose threat to the safety and suitability of food.
- d) Food contact tool & equipment shall not be kept in personal lockers. Processing equipment (for example, refrigerators and freezers) should not be used for personal storage (such as storing lunches).

4.5 Visitors

Visitors shall wear protective clothing, footwear and adhere to all the personal hygiene requirements as mentioned above while entering food handling areas.

V. PRODUCT INFORMATION AND CONSUMER AWARENESS

5.1 Product information & Labelling

- a) All packaged food products shall carry a label and requisite information as per provisions of Food Safety and Standards Act, 2006 and regulations made there under so as to ensure that adequate and accessible information is available to each person in the food chain to enable them to handle, store, process, prepare and display the food products safely and correctly and that the lot or batch can be easily traced and recalled if necessary.
- b) This should also include information that identifies food allergens in the product as ingredients or where cross contamination cannot be excluded as per Food Safety Standards (Packaging & Labelling) Regulations, 2011.
- c) Lot identification is essential in product recall and also helps effective stock rotation. Each container of food should be permanently marked to identify the producer and the lot.

5.2 Consumer awareness and Complaint handling

- a) Information shall be presented to consumers in such a way as to enable them to understand its importance and make informed choices. Information may be provided by labelling or other means, such as company websites and advertisements, and may include storage, preparation and serving instructions applicable to the product.
- b) Product complaints are an important indicator of possible deficiencies of the preventive food safety control systems and/or pre-requisite programs. The operator should develop and implement written procedures to handle product complaints. These should identify the person or people responsible for receiving, evaluating, categorizing, investigating and addressing complaints.
- c) Consumer awareness program should include general food hygiene. Such program should enable consumers to understand the importance of any product information & to follow any instructions accompanying product & make informed choices. In particular consumers should be informed of relationship between time/ temperature control & food borne illness.
- d) The information received from the complainant should be documented and should include:
 - the date;
 - the name of complainant, and their address and phone numbers;
 - the nature and details of the complaint (for example, illness, allergic reaction, quality issue, labelling issue);
 - the product affected (including name, description, size, date of manufacture, code, lot number or UPC); and
 - where the product was obtained.
- e) Complaints should be accurately categorized according to safety concerns and other regulatory concerns, such as labelling. Complaints related to food safety shall be investigated by appropriately-trained technical personnel.
- f) The step – wise preferable practices on complaint handling are:
 - Policy and complaints handling procedure
 - Examining the complaint to identify the food safety risk
 - Investigation and root cause analysis (RCA)
 - Corrective action
 - Resolving the complaint with complainant
 - Complaint trending and analysis
 - Preventive action

VI. ESTABLISHMENT-TRAINING & MANAGEMENT

6.1 Training

- a) All personnel should be aware of their role & responsibility in protecting food from contamination or deterioration. Training need identification to be done for all food handlers and accordingly training to be organized.
- b) Training should be given to personnel responsible for monitoring and measurements and corrective actions in the food safety management system, supervisors whose activities have an impact on food safety and internal auditors. Periodic assessments of the effectiveness of training should be done.
- c) Annual training calendar should be prepared covering all relevant topics pertaining to the food business (both behavioural and functional) with an objective to cover all food handlers in phased manner.
- d) All food handlers shall be instructed & trained in food hygiene & food safety aspects along with personal hygiene requirements commensurate with their work activities, the nature of food, its handling, processing, packaging, storage, service & distribution. Induction trainings (for new employees) and refresher trainings (for existing employees) should be conducted.
- e) Training programs shall be routinely reviewed & updated wherever necessary. Systems shall be in place to ensure that food handlers remain aware of all procedures necessary to maintain the safety & suitability of food. Records of training shall be maintained.

6.2 Management & supervision

- a) The Food Business shall ensure that technical managers and supervisors have appropriate qualifications, knowledge and skills on food hygiene principles and practices to be able to ensure food safety and quality of its products, judge food hazards, take appropriate preventive and corrective action, and to ensure effective monitoring and supervision.
- b) The FBO management shall provide and maintain documented standard operating procedure for FSMS systems compliance and its supervision at site through records/ checklists on routine basis to control any possible hazards throughout supply chain.
- c) Commitment from management is essential to communicate the importance of producing safe food, both for the consumer and the business. Managers should continually improve the effectiveness of the food hygiene systems in place by:
 - ensuring that roles and responsibilities are clearly communicated in the food business;
 - ensuring the availability of resources;
 - maintaining the integrity of the food hygiene system when changes are planned and implemented;
 - verifying that controls are working and documentation is up to date;
 - ensuring the appropriate training and supervision is in place for personnel;
 - ensuring compliance with relevant statutory and regulatory requirements; and
 - enable a strong food safety culture by demonstrating commitment to providing safe and suitable food and encouraging appropriate food safety behaviours.

VII. ESTABLISHMENT - AUDIT, DOCUMENTATION AND RECORD KEEPING

7.1 Self-Evaluation and Review

- a) FBO shall conduct a self-evaluation through internal and external audits or other mechanisms at periodic intervals, but at least once in a year to verify the effectiveness of the implemented food safety systems. For continual improvement, FBO should undertake a complete review of the systems including self-evaluation results, customer feedback, complaints, new technologies and regulatory updates at periodic intervals, but at least once in a year.
- b) Necessary corrective actions based on self-evaluation results shall be taken.

7.2 Documentation & Records

- a) Appropriate documentation & records including incoming material checks, inspection and testing, calibration of food safety equipments, water testing, operational controls (such as temperature, pressure, time etc.), product recall and traceability, storage, cleaning and sanitation, pest control, medical examination and health status of food handlers, training etc. shall be maintained in a legible manner, retained in good condition for a period of one year or the shelf life of the product whichever is more.
- b) Any changes to records should be traceable (for example, errors are identified by a strike out and followed by initials). Each entry on a record should be signed and dated by the responsible person at the time the specific event occurred.
- c) Record-keeping requirements and responsibilities should be communicated to staff.
- d) Records should be kept in a secure location, maintained and readily available for a period of one year or shelf life, whichever is more.

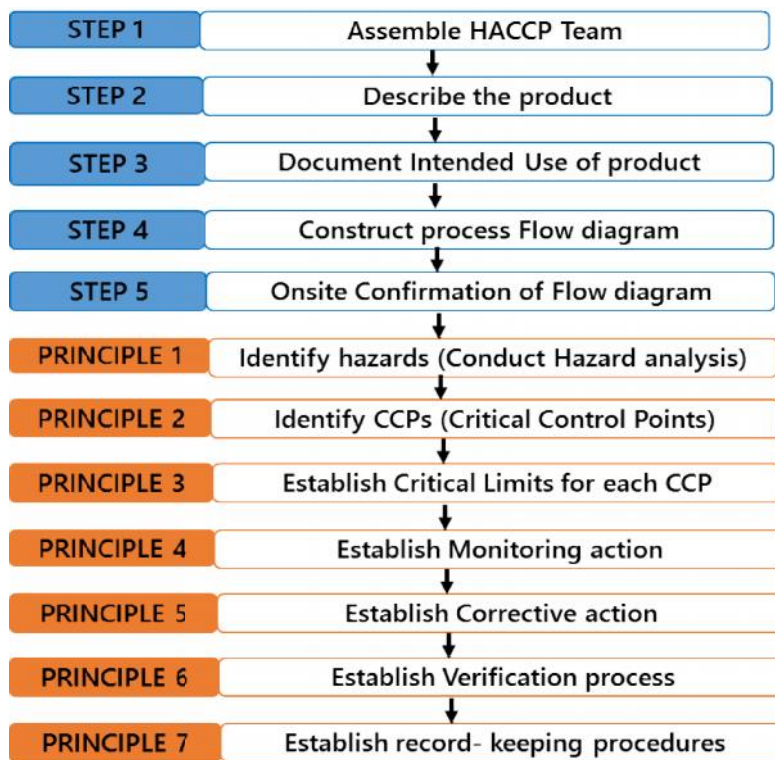
C. HACCP

HACCP

HAZARD Analysis and Critical Control Points (HACCP), is a systematic approach, to the identification and assessment of the microbiological, chemical, physical and allergenic hazards and risk associated with the manufacture, distribution and use of a particular product and the definition of a means for their control.

Implementing Hazard Analysis and Critical Control Point (HACCP) is crucial for any food industry. As it helps in identifying the weakness of the production line and to suggest critical limits in compliance with legislation and therefore the preventive and corrective measures.

HACCP is a management tool that provides a structured, systematic approach to the identification of hazards and methods of control that is not achievable by traditional testing and inspection approaches (quality control).



During implementation of HACCP, it is imperative to set controls at each point of the production line at which safety problems (physical, chemical and microbiological) are likely to occur.

A HACCP plan is required to be in place before initiating the HACCP system. A HACCP plan consists of 5 initial steps and 7 major HACCP principles.

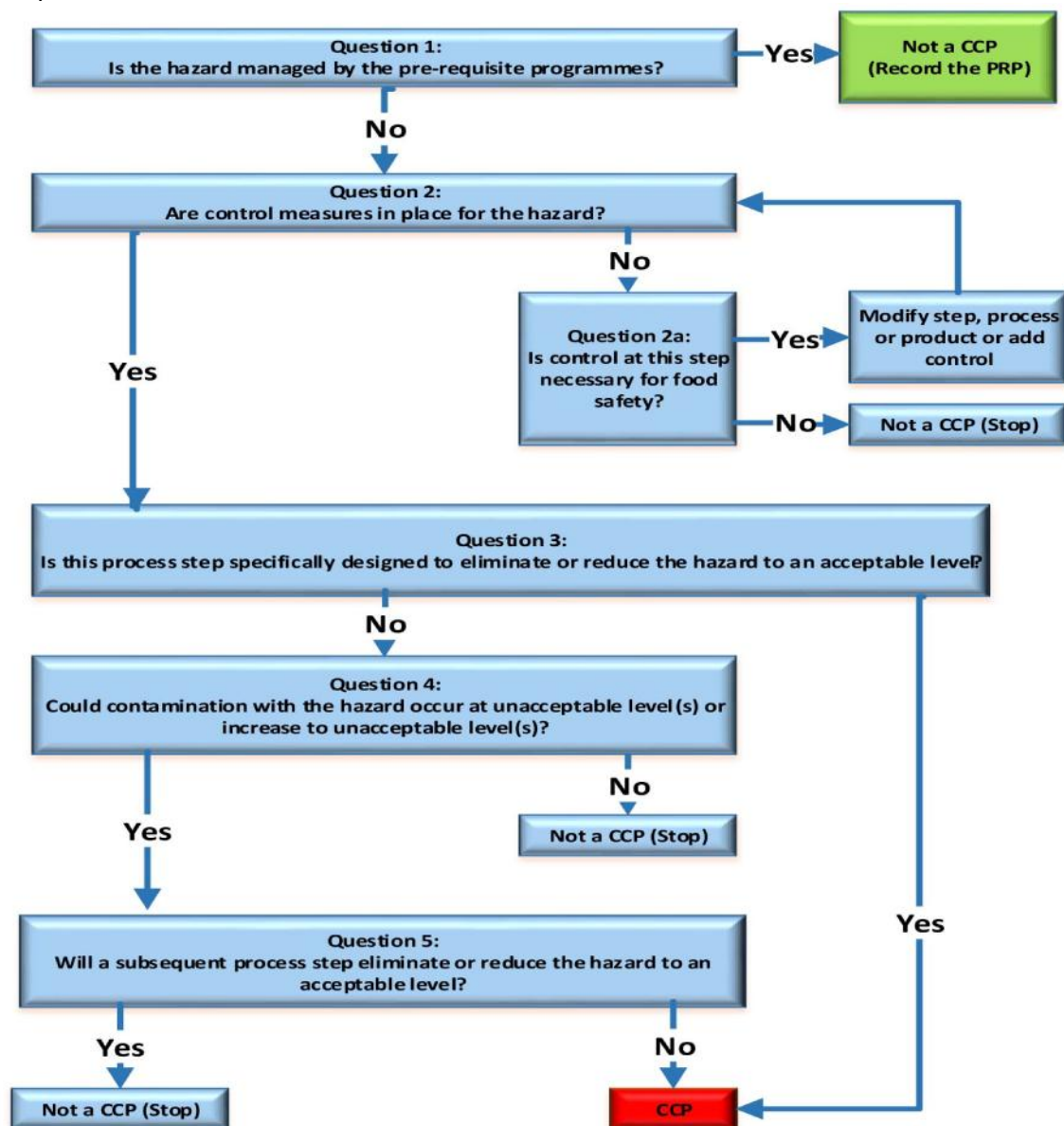
The requirements for Sanitation Standard Operating Procedures (SSOPs) along with Good Manufacturing Practices (GMPs) & Good Hygiene Practices should be considered as Pre-Requisite for HACCP.

Introduction to Decision Tree

Hazard Analysis and Critical Control Point (HACCP) decision trees are tools that can be used to help you decide whether a hazard control point is a critical control point (CCP) or not. A CCP is a step at which control can be applied. However, it is not always possible to eliminate or prevent a food safety hazard, so this allows you to reduce it to an acceptable level.

The purpose of a decision tree is to support the judgement of the team and help you to confirm whether the hazard needs more food safety controls. Decision trees are not mandatory elements of HACCP but they can be useful in helping you determine whether a particular step is a CCP.

It is vital that you determine the correct CCPs to ensure that food is managed effectively and safely. The number of CCPs in a process will depend on how complex the process is and how many hazards are present.



II. APPLICATION OF HACCP SYSTEM

1. HACCP Implementation steps

1.1 Assemble HACCP team

The food operation shall ensure that the appropriate product specific knowledge and expertise is available for the development and implementation of an effective HACCP plan. A multidisciplinary team shall be assembled either in-house or if such expertise is not available on-site, expert advice shall be obtained from other sources, such as trade and industry associations, independent experts, regulatory authorities, HACCP plan shall be identified and shall describe which segment of the food chain is involved and the general classes of hazards to be addressed (all or selected classes).

1.2 Describe product

A full description of the product shall be drawn up, including relevant safety information such as composition (including raw materials ingredients, allergens), origin, physical/chemical properties that impact food safety (including Aw, pH, etc.), microbial/static treatments (heat treatment, freezing, brining, smoking etc.), packing, labeling, durability and storage conditions and method of distribution. Within businesses with multiple product for example, catering operations with similar characteristics or processing steps may be grouped for the purpose of development of the HACCP plan.

1.3 Identify intended use

The intended use of the product shall be defined based on the expected uses of the product by the end user or customer. The suitability of the product for vulnerable groups of the population such as pregnant women, infants, and elderly should be considered, as necessary.

1.4 Construct flow diagram

The flow diagram shall be prepared to cover all steps in the operation for each specific product or product category. When applying HACCP to a given operation, consideration shall be given to steps preceding and following the specified operation.

1.5 On-site confirmation of flow diagram

Steps shall be taken to confirm the proceeding operation against the flow diagram during all stages and hours of operation and amend the flow diagram where appropriate. The confirmation of the flow diagram should be performed by a competent person or persons. On-site verification activities shall be carried out whenever there are any changes in the process.

1.6 List of all potential hazards associated with each step, conduct a hazard analysis, and consider any measures to control identified hazards (SEE PRNCILPLE 1)

The HACCP team should list all potential hazards (physical, chemical, biological) that may be reasonably expected to occur at each step according to the scope. It should then conduct a hazard analysis to identify for the HACCP plan which hazards are of such a nature that their elimination or reduction to acceptable levels is essential to the production of safe food.

In conducting the hazard analysis, the following should be included as appropriate:

- The likely occurrence of hazard and severity of their adverse health effects;
- The qualitative and/ or quantitative evaluation of the presence of hazards;
- Survival or multiplication of micro-organisms of concern;
- Production or persistence of foods of toxins, chemicals or physical agents; and
- Conditions leading to the above.

For selection of control measures, consideration shall be given to what control measures, if any, can be applied to each hazard.

More than one control measure may be required to control a specific hazard and more than one hazard may be controlled by a specified control, measure. Where elimination of hazard is not practical, justification for acceptable levels of the hazard in the finished product shall be determined and documented.

1.7 Determine Critical Control Points (SEE PRINCIPLE 2)

For each hazard that requires control, control measures shall be identified. The control measures shall be reviewed to identify those that need to be addressed through the HACCP plan and for which CCPs shall be identified. There may be more than one CCP at which control is applied to address the same hazard or there may be cases where there is no CCP identified. The CCP in the HACCP system shall be determined and this may be facilitated by a logic reasoning approach such as the application of a decision tree. The application of a decision tree should be flexible. This example of a decision tree may not be applicable to all situations and alternative approaches may be used.

If a hazard has been identified at a step where control is necessary for safety, and no control measure exists at that step, or any other, then the product or process should be modified at that step, or at any earlier or later stage, to include a control measure.

1.8 Establish Critical Limits for each CCP (SEE PRINCIPLE 3)

Critical Limits shall be specified and validated for each CCP. In some cases, more than one critical limit may be elaborated at a particular step.

These critical limits shall be measurable, Critical Limits based on subjective data (such as visual inspection of product, process, handling) shall be supported by instructions or specifications and / or education and training.

1.9 Establish a monitoring system for each CCP (SEE PRINCIPLE 4)

A monitoring system shall be established for each CCP to demonstrate that the CCP is under control. The monitoring shall be able to detect loss of control at the CCP and in time to make adjustments to regain control of the process and prevent violation of the critical limits. Where possible, process adjustments should be made when the results of monitoring indicate a trend towards loss of control at a CCP. The adjustment should be taken before a deviation occurs.

Data derived from monitoring shall be evaluated by a designated person with knowledge and authority to carry out corrective actions when indicated. If monitoring is not continuous, then the amount or frequency of monitoring shall be sufficient to ensure that the CCP is under control. The monitoring system shall cover the following:

- Measurements or observations that provide results within an adequate time frame;
- Monitoring device used;
- Applicable calibration method;
- Monitoring frequency;
- Responsibility and authority related to monitoring and evaluation of monitoring results; and
- Records.

All records and documents associated with monitoring CCPs shall be signed by the person(s) doing the monitoring and by the responsible reviewing official(s) of the company.

The monitoring methods and frequency shall be capable of determining when the critical limits have been exceeded in time for the product to be isolated before it is used or consumed.

1.10 Establish corrective actions (SEE PRINCIPLE 5)

Specific planned corrective actions shall be developed for each CCP in the HACCP system in order to deal with deviations when they occur and to prevent their recurrence. This may require identification of the causes of deviation.

The action shall ensure that the CCP has been brought under control. Actions taken shall also include proper disposition of the affected product. Deviation and product disposition procedures shall be documented. Records of deviations and disposition shall be maintained.

1.11 Establish Verification Procedures (SEE PRINCIPLE 6)

The verification procedures consist of two activities, verification activities and validation activities.

The food business operator shall have in place a system to verify the HACCP plan at a set frequency. Procedures for verification shall be established. The frequency of verification should be sufficient to confirm that the HACCP system is working effectively.

Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where certain verification activities cannot be performed in-house, verification should be performed on behalf of the business by external experts or qualified third parties.

The HACCP system, including the HACCP plan, shall be reviewed (atleast once in a year) and necessary changes made when any modification is made in the product, process, or any step.

Verification activities shall include:

- Self-evaluation;
- Review of the HACCP system and plan and its records;
- Review of deviation and product dispositions; and

- Confirmation that CCPs are kept under control.

The results of verification shall be maintained and communicated to the HACCP team/ relevant staff.

The food business operator shall periodically validate the HACCP plan and necessarily before its implementation and after any changes are made. The objective of the validation process is to ensure that identified hazards are complete, correct and effectively controlled under the HACCP plan. Validation activities should include actions to confirm the efficacy of the HACCP system. Records of validation shall be maintained. An annual review of the complete HACCP system shall be carried out.

Verification and validation activities are also important for maintenance of the system as well as continual improvements.

1.12 Establish Documentation and Record Keeping (SEE PRINCIPLE 7)

HACCP procedures shall be documented. Documentation and record keeping shall be appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP controls are in place and being maintained.

Documentation shall include (as a minimum) the following:

- HACCP team composition;
- Product description;
- Intended use;
- Flow chart;
- Hazard analysis;
- CCP determination;
- Critical limit determination;
- Validation process; and
- HACCP plan

The HACCP plan shall include the following information for each identified CCP:

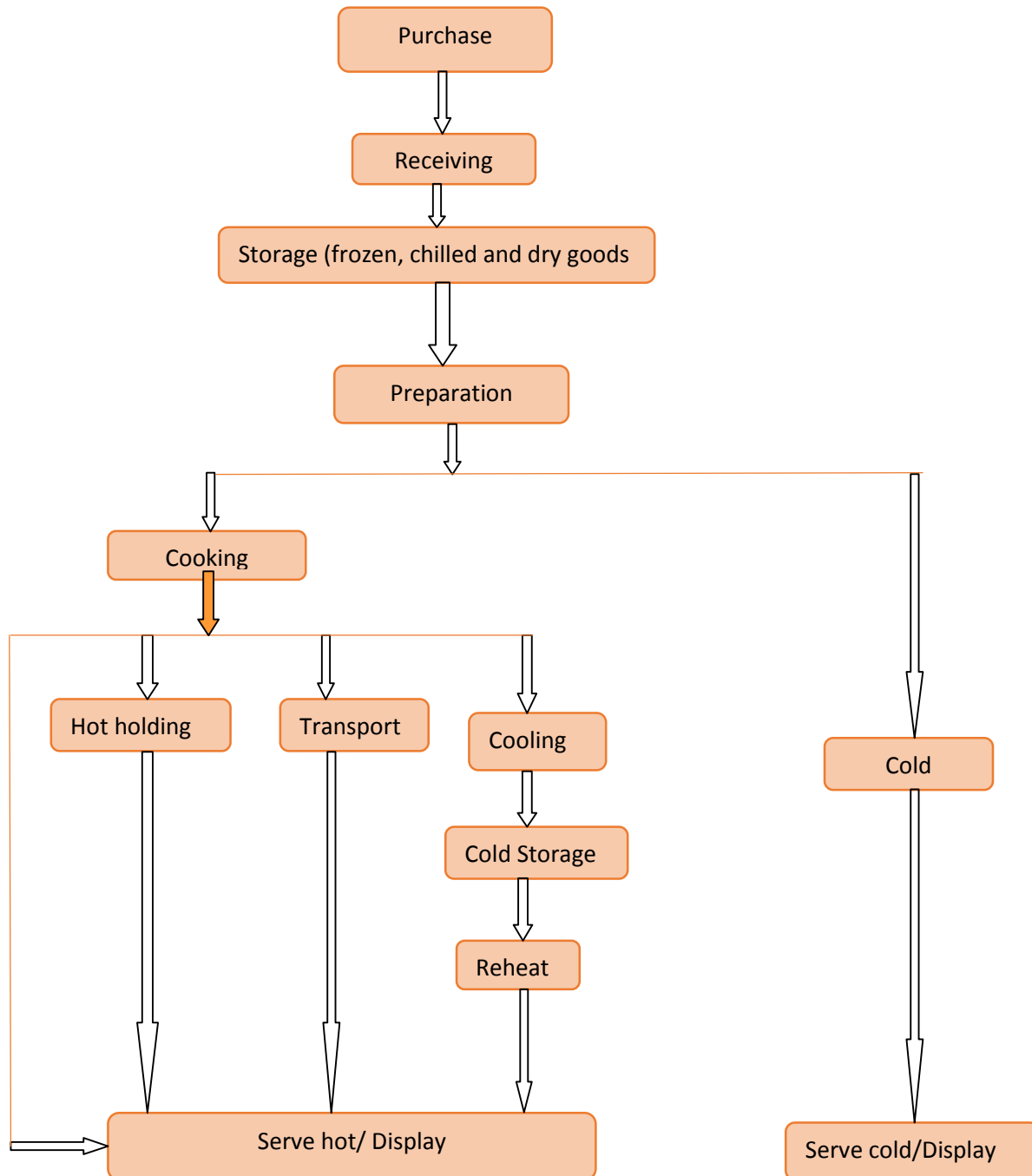
- Food safety hazard(s) to be controlled at the CCP;
- Control measure(s);
- Critical limit(s);
- Monitoring procedure(s);
- Corrections and corrective action(s) to be taken if critical limits are exceeded;
- Responsibilities and authorities for monitoring, corrective action and verification;
- Record(s) of monitoring.

Records to include

- CCP monitoring activities;
- Deviations and associated corrective actions;
- Disposition of non-conforming products;
- Verification procedures performed;
- Modifications to the HACCP plan;

- Validation record;
- Product release records; and
- Testing records.

GMP AND GHP IN FOOD HANDLING FOR HOTELS & RESTAURANTS



SAMPLE HACCP PLAN FOR CATERING SECTOR

Purchase

Hazards	Control Limits	Monitoring Procedures				Corrective Actions	Records
		What	How	When	Who		
Raw materials contaminated with <ul style="list-style-type: none"> • Food poisoning bacteria • Toxins • Chemicals such as pesticides • Glass, metal, etc. 	Raw materials obtained from FSSAI approved/licensed vendor	FSSAIL Licence and Registration	Inspect suppliers premises and check their monitoring records	Once a year and before renewing contract with suppliers	Purchasing manager	Avoid unqualified supplies	Record of approved and unqualified suppliers
		Certificate of Guarantee	Check records	Before renewing contracts with suppliers	Purchasing manager	Avoid unqualified supplies	
	Establish products safety and quality specifications with suppliers including delivery temperature of perishable food	Requirements mentioned in product specification	Check product specification	Before purchasing	Purchasing manager	avoid ordering substandard food	Purchasing record form and product specification

Food Receiving

Hazards	Control Limits	Monitoring Procedures	Corrective Actions	Records	Hazards	Control Limits	Monitoring Procedures
Damaged packaging and contamination with foreign matter (including food poisoning bacteria)	Packaging is intact and has no visible foreign matter	Integrity of packaging and signs of contamination	Visual checking	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	Record of incoming food and supplies
	Delivery vehicles are clean and hygienic and are not used for the transport of chemicals	Hygienic condition of vehicles and evidence of the vehicle being used to transport chemicals	Visual checking	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	No sign of deterioration of raw materials (eg. appearance and odour, etc.)	General conditions of raw materials	Check the appearance of raw materials (i.e. colour, smell, texture, etc.)	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	Not exceeding the 'Best Before' / Expiry of raw materials	Best Before' / Expiry of raw materials	Check the labels	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	
	Temperature of raw materials on arrival; 4 C or below chilled foods/ entirely frozen (frozen foods)	Temperature of raw materials	Use thermometer and check the appearance of food	Receiving raw materials	Receiver	Reject raw materials and inform suppliers	

	Store chilled/ frozen foods at 4C/ 18C or below immediately after receiving (e.g. within ten minutes)	Procedures for receiving and storing food	Visual checking	Receiving raw material	Store keeper	<ul style="list-style-type: none"> • Review the procedure for receiving food to ensure that food should be stored within specified time • Discard chilled/ frozen food if placing at ambient temperature for too long (eg. chilled foods have been placed at ambient temperature for more than four hours) 	
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Dry Storage

Hazards	Control limits	Monitoring procedures			Who	Corrective actions	Records
		What	How	When			
Cross – contamination	Group and store food according to their properties and store food in appropriate containers	Storage conditions	Visual checking	storing/ taking food ingredients	Store keeper	<ul style="list-style-type: none"> • Store food in appropriate container and reorganize layout to separate different food types • Discard contaminated food 	
	Packaging is intact and has no foreign matter	General condition of food	Visual checking	storing/ taking food ingredients	Store keeper	<ul style="list-style-type: none"> • Re-wrap the food • Discard contaminate food 	
	Keep storage area dry and clean	Hygienic condition of storage area	Visual checking	storing/ taking food ingredients	Assistant manager	Clean the storage area immediately	
		Cleaning records	Check records	Before off-duty	Assistant manager	Remind staff to clean storage area according to the schedule	Cleaning records
	Storage area is not infested with pests	Signs of pests	Visual checking	Weekly	Assistant manager	Use proper methods (e.g. rodent traps) to capture and kill pests where there are signs of pests or employ a pest control company	Pest control monitoring and inspection records

Growth of food poisoning bacteria	Use first-in-first-out (FIFO) rotation (use date codes or marks to show the time sequence of food storage)	Date codes/ marks (e.g. “Best before”/ receiving date)	Check date codes/ marks	Daily	Store keeper	Discard food if its “best before” is passed or it has no date codes/ marks	Store records
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Refrigerator Storage

Hazards	Control limits	Monitoring procedures				Corrective actions	Records
		What	How	When	Who		
Cross-contamination (eg. cooked food contaminated by raw food)	Cover/ wrap fall food and store cooked and raw foods separately	Storage conditions	Visual checking	storing/ taking food ingredients	Store keeper	<ul style="list-style-type: none"> Cover/ wrap the food Reorganize layout to separate different food types (e.g. store cooked and raw foods separately) 	
	Keep storage area clean	Hygienic condition of storage area	Visual checking	storing/ taking food ingredients	Store keeper	Clean the storage area immediately	
Growth of food poisoning bacteria and formation of toxins	Storage temperature at 4C or below	Temperature of the chiller	Use thermometer	Three times a day (in the morning, at noon and before off-duty)	Store keeper	<ul style="list-style-type: none"> Adjust temperature or repair chiller where appropriate Discard affected food 	Temperature records sheet for chiller
	Storage area with food air	Storage condition	Visual checking	storing/ taking food	Chef assistant	Reorganize layout	

	circulation			ingredients			
	Use first-in-first-out (FIFO) rotation (use date codes or marks to show the time sequence of food storage)	Date codes/ marks (e.g. “Best before”/ receiving date)	Check date codes/ marks	Check date codes/ marks	Chef assistant	Discard food if its “best before” is passed or it has no date codes/ marks	Store records

Frozen storage

Hazards	Control limits	Monitoring procedures				Corrective actions	Records
		What	How	When	Who		
Growth of food poisoning bacteria	Temperature of freezer at 18°C or below	Temperature of freezer	Use thermometer	Three times a day (in the morning, at noon and before off-duty)	Store keeper adjust temperature	Growth of food poisoning bacteria and formation of toxins	Temperature record sheet for freezer
	Storage area with good air circulation	Storage conditions	Visual checking	Storing/ taking food ingredients	Store keeper	Reorganize layout	

Preparation

Hazards	Control limits	Monitoring procedures				Corrective actions	Records
		What	How	When	Who		
Cross-contamination	Use appropriate methods (e.g. colour code) to distinguish the utensils and cutting boards for handling ready-to-eat foods from raw foods	Utensils and cutting boards	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Clean the utensils and put them back to the appropriate location Retrain the staff 	Corrective action record sheet
	Ready-to-eat fruits and vegetables are clean and hygienic	Procedures of washing fruits and vegetables	Visual checking	During working	Chef assistant	Discard contaminated ready-to-eat fruits and vegetables	
Growth of food poisoning bacteria and formation of toxin	Frozen foods to be thawed under <ul style="list-style-type: none"> Refrigeration at 8C or below Colour running water in waterproof package 	Methods of thawing (eg. thawing temperature, food is packed in waterproof package, water is cool and running while thawing)	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Adjust the thawing temperature to 8C or below Discard contaminated food Retrain the staff 	
	Frozen foods are adequately thawed (no hardening with ice) before cooking	Condition of the thawed foods	Touching and visual checking	Before cooking	Chef assistant	Thaw the food under suitable condition further	
	Maximum time for holding thawed foods	Length of time holding	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Control the processing 	

	and cold perishable foods at above 4C four hours	perishable foods at above 4C in food preparation area				procedures so as to shorten the time in which perishable food is held above 4C <ul style="list-style-type: none"> Discard perishable food that have been held above 4C for more than four hours 	
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Cooling

Hazards	Control limits	Monitoring procedures				Corrective actions	Records
		What	How	When	Who		
Cross-contamination	Food is protected from contamination during cooling	Cooling environment (whether there is any source of contamination)	Visual checking	During working	Chef assistant	<ul style="list-style-type: none"> Eliminate the possible sources of contamination Discard contaminated food 	
	Containers are clean and hygienic	Cleanliness of containers	Visual checking	Before use	Chef assistant	Clean and sanitise the containers	
Growth of food poisoning bacteria and formation of toxin	Containers less than five cm/ two inches high	Height of containers	Visual checking	Before use	Chef assistant	Use shallow containers	
	Cool to 4 C or	Cooling time	Use timer	Every hour	Chef	<ul style="list-style-type: none"> Cool food by – 	Temperature

	below in six hours (cool from 63C to 20C in two hours and then to 4C or below in the next four hours)	and temperature of foods	and thermometer		assistant	<ul style="list-style-type: none"> ➤ Dividing into small portions ➤ Placing containers in ice water bath ➤ Stirring frequently • Discard product if temperature is still above 5 C after six hours of cooling 	record sheet
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Reheating

Hazards	Control limits	Monitoring procedures				Corrective actions	Records
		What	How	When	Who		
Survival of food poisoning bacteria	Heat food to a core temperature 75C or above as quickly as possible	Core food temperature	use thermometer	Each batch	Chef assistant	Continue reheating food to required temperature	Temperature record sheet

D. INSPECTION CHECKLIST

Date		FBO Name	
Food Safety Officer		FBO's representative	
FBO License No.		Address	

Indicate the following – Compliance (C), Noncompliance (NC), Partial Compliance (PC) or Not Applicable (NA)

S. No.	Audit Question	Scoring	
1.	Food establishment has an updated FSSAI license and is displayed at a prominent location.	2	
I.	Design & facilities		
2.	The design of food premises provides adequate working space; permit maintenance & cleaning to prevent the entry of dirt, dust & pests.	2	
3.	The internal structure & fittings are made of non-toxic and impermeable material.	2	
4.	Walls, ceilings & doors are free from flaking paint or plaster, condensation & shedding particles.	2	
5.	Floors are non-absorbent, non-slippery & sloped appropriately.	2	
6.	Windows are kept closed & fitted with insect proof screen when opening to external environment.	2	
7.	Doors are smooth and non-absorbent. Suitable precautions have been taken prevent entry of pests.	2	
8.*	<i>Potable water (meeting standards of IS:10500 & tested semi-annually with records maintained thereof) is used as product ingredient or in contact with food or food contact surface.</i>	4	
9.	Equipment and containers are made of non-toxic, impervious, non- corrosive material which is easy to clean & disinfect.	2	
10.	Adequate facilities for heating, cooling, refrigeration and freezing food & facilitate monitoring of temperature.	2	
11.	Premise has sufficient lighting. Lighting fixtures are protected to prevent contamination on breakage.	2	
12.	Adequate ventilation is provided within the premises.	2	
13.	An adequate storage facility for food, packaging materials, chemicals, personnel items etc is available.	2	
14.	Personnel hygiene facilities are available including adequate number of hand washing facilities, toilets, change rooms for employees etc.	2	
15.	Food material is tested either through internal laboratory or through an accredited lab. Check for records.	2	
II	Control of operation		
16.	Incoming material is procured as per internally laid down specification from approved vendors. Check for records (like certificate of analysis, Form E, specifications, name and address of the supplier, batch no., mfg., use by/expiry date, quantity procured etc.)	2	
17.	Raw materials are inspected at the time of receiving for food safety hazards.(Farm produce like vegetables, fruits, eggs etc. must be checked for spoilage and accepted only in good condition)	2	
18.	Incoming material, semi or final products are stored according to their temperature requirement in a hygienic environment to avoid deterioration and protect from contamination. FIFO & FEFO is practiced. (Foods of animal origin are stored at a temperature less than or equal to 4°C)	2	

19.	All raw materials are cleaned thoroughly before food preparation.	2	
20.	Proper segregation of raw, cooked; vegetarian and non-vegetarian food is done.	2	
21.	All the equipment is adequately sanitized before and after food preparation.	2	
22. *	Frozen food is thawed hygienically. No thawed food is stored for later use. (Meat, Fish and poultry is thawed in refrigerator at 5°C or below or in microwave. Shellfish/seafood is thawed in cold potable running water at 15°C or below within 90 minutes.	4	
23. *	<i>Vegetarian items are cooked to a minimum of 60°C for 10 minutes or 65°C for 2 minutes core food temperature. Non vegetarian items are cooked for a minimum of 65°C for 10 minutes or 70°C for 2 minutes or 75°C for 15 seconds core food temperature.</i>	4	
24. *	Cooked food intended for refrigeration is cooled appropriately. (High risk food is cooled from 60°C to 21°C within 2 hours or less and further cooled to 5°C within two hours or less.)	4	
25.	Food portioning is done in hygienic conditions. High risk food is portioned in a refrigerated area or portioned and refrigerated within 30 minutes. Large amount of food is portioned below 15°C.	2	
26.	Hot food intended for consumption is held at 65°C and non-vegetarian food intended for consumption is held at 70°C. Cold foods are maintained at 5°C or below and frozen products are held at -18°C or below. (*Hot food is kept above 65°C and cold food is kept below 5°C but below 10°C upto 42 hours for not more than two hours only once.)	4	
27.	Reheating is done appropriately and no indirect reheating such as adding hot water or reheating under bain marie or reheating under lamp is being used. (The core temperature of food reaches 75°C and is reheated for at least 2 minutes at this temperature.)	4	
28.	Oil being used is suitable for cooking purposes is being used. Periodic verification of fat and oil by checking the color, the flavor and floated elements is being done.	2	
29.	Vehicle intended for food transportation are kept clean and maintained in good repair & are maintain required temperature. (Hot foods are held at 65°C, cold foods at 5°C and frozen item -18°C during transportation or transported within 2 hours of food preparation).	4	
30.	Food and non-food products transported at same time in the same vehicle are separated adequately to avoid any risk to food.	2	
31.	Cutlery, crockery used for serving and dinner accompaniments at dining service are clean and sanitized free form unhygienic matters.	2	
32.	Packaging and wrapping material coming in contact with food is clean and of food grade quality.		
III	Maintenance & sanitation		
33.	Cleaning of equipment, food premises is done as per cleaning schedule & cleaning programme. There should be no stagnation of water in food zones.	2	
34.	Preventive maintenance of equipment and machinery are carried out regularly as per the instructions of the manufacturer. Check for records.	2	
35.	Measuring & monitoring devices are calibrated periodically.	2	
36.	Pest control program is available & pest control activities are carried out by trained and experienced personnel. Check for records.	2	
37. *	<i>No signs of pest activity or infestation in premises (eggs, larvae, faeces etc.)</i>	4	
38.	Drains are designed to meet expected flow loads and equipped with grease and cockroach traps to capture contaminants and pests.	2	

39.	Food waste and other refuse are removed periodically from food handling areas to avoid accumulation.	2	
IV	Personal Hygiene		
40.	Annual medical examination & inoculation of food handlers against the enteric group of diseases as per recommended schedule of the vaccine is done. Check for records.	2	
41.	No person suffering from a disease or illness or with open wounds or burns is involved in handling of food or materials which come in contact with food.	2	
42. *	<i>Food handlers maintain personal cleanliness (clean clothes, trimmed nails & water proof bandage etc.) and personal behavior (hand washing, no loose jewellery, no smoking, no spitting etc.)</i>	4	
43.	Food handlers are equipped with suitable aprons, gloves, headgear, etc.; wherever necessary.	2	
V	Training & records keeping		
44.	Internal / External audit of the system is done periodically. Check for records.	2	
45.	Food Business has an effective consumer complaints redressal mechanism.	2	
46.	Food handlers have the necessary knowledge and skills & trained to handle food safely. Check for training records.	2	
47. *	<i>Appropriate documentation & records are available and retained for a period of one year, whichever is more.</i>	4	

Total points/114

Asterisk mark (*) questions may significantly impact food safety & therefore must be addressed as a priority. Failure in any of the asterisk mark (*) questions, will lead to Non-compliance

Grading –

<input type="checkbox"/>	A ⁺	114-102	Compliance – Exemplar
<input type="checkbox"/>	A	101-92	Compliance/Satisfactory
<input type="checkbox"/>	B	91- 82	Needs Improvement
<input type="checkbox"/>	No grade	<82	Non Compliance

E. PERFORMAS

1. Approved Supplier List (Template)

S.No.	Item/Material Name	Location of Use	Primary Approved Supplier (Name & complete address)					Secondary Approved Supplier (Name & complete address)				
			Complete Address	Contact Person	Contact No.	Email id	Fax	Complete Address	Contact Person	Contact No.	Email id	Fax

2. Form E – Form of Guarantee

FORM E

Form of Guarantee

Date of sale	Nature and quality of article/brand name, if any	Batch No. or Code No.	Quantity	Price
1	2	3	4	5

Invoice No. _____

Place: _____

From: _____

Date: _____

To: _____

I/We hereby certify that food/foods mentioned in this invoice is/are warranted to be of the nature and quality which it/ these purports/purported to be.

Signature of the
Manufacturer/Distributor/Dealer

Name and address of
Manufacturer/Packer
(in case of packed article)
License No. (wherever applicable)

3. Incoming Vehicle Inspection Record (Template)

Date of Incoming Vehicle:

Vehicle Type:

Material in Vehicle received:

Number of Persons accompanying Driver:

PARAMETER EVALUATED	REMARKS
Security lock	
Type of carrier (full covered/ Open Roof)	
Mode of covering products (in case of Open Roof)	
Overall Hygiene in the interior	
Overall Hygiene on the exterior	
Any sharp edges / points in the interior of vehicle	
Any pests detected	
Any grease /oil detected	

Authorized Singature

4. Incoming Material Inspection (Template)

Includes all type: Raw materials, Ingredients, Food addiitives, Processing aids, Packaging materials, Cleaning and sanitation chemiclas, etc.

Material Name:	
Supplier Name:	
Identification/Location of Supplier:	
Quantity received:	
Pack size received:	
Material Receipt Date:	
Transport Mode:	
Rejected (Yes/No):	
Reason for Rejection:	

PARAMETER EVALUATED	STATUS/RESULTS	Signature
Temperature (Degree Celsius)		
Visual Inspection Condition (OK/Not OK)		
Packaging & Labelling Condition (OK/Not OK)		
Production Date/Shelf Life Date/Expiry Date		
Vehicle Inspection Condition (OK/Not OK)		
Quality Lab Results (If applicable)		
Certificate Of Analysis (COA) received (Yes/No)		
Remarks		
Clearannc Date		
Authorized Signatore		

5. Operation Log Sheet (Template for Temperature Control)

S.No.	Date	Time	Temp. Gauge Number	Specification / Range allowed	Actual Result	Remarks	Sign

6. Non-conforming Material/Product (Template)

HOLD:

REJECT:

Material Type:

Finished Product

Raw Material

In-Process Product

Packaging Material

Material Name:

Date of Manufacturing/Receipt:

Quantity of Manufacturing/Receipt:

Lot/Batch No.

Quantity used:

Lot/Batch No.

Quantity Hold:

Lot/Batch No.

Quantity Rejected:

Lot/Batch No.

Reason for Hold:

Reason for Rejection:

Corrective Action:

Preventive Action:

Remarks:

Signature:

QC Executive

Quality Manager

Mfg. Manager

7. Pest Management Plan (Template)

Type of Pest	Mode of Control	Station (locations) monitored	Number designated	Frequency of Monitoring	Remarks

8. Pest Monitoring record (Template)

Date	Type of Pest	Mode of Control	Station (locations) monitored	Number designated	Frequency of Monitoring	Clean (ok/Not ok)	Remarks	Sign

9. Medical Fitness Certificate for Food handlers (Template)

PERFORMA FOR MEDICAL FITNESS CERTIFICATE FOR FOOD HANDLERS (FOR THE YEAR)

(See Para No. 10.1.2, Part- II, Schedule - 4 of FSS Regulation, 2011)

It is certified that Shri/Smt./Miss.....
employed with M/s....., coming in direct
contact with food items has been carefully examined* by me on date
Based on the medical examination conducted, he/she is found free from any
infectious or communicable diseases and the person is fit to work in the above
mentioned food establishment.

Name and Signature with Seal
of Registered Medical Practitioner /
Civil Surgeon

***Medical Examination to be conducted:**

1. Physical Examination
2. Eye Test
3. Skin Examination
4. Compliance with schedule of Vaccine to be inoculated against enteric group of diseases
5. Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from on clinical examination.