

# Good Manufacturing Practices

# Module Overview

Building an effective food safety system requires the establishment and maintenance of appropriate good practices which provide an environment conducive to producing safe food. In a food manufacturing setting, these practices are often collectively referred to as Good Manufacturing Practices (GMPs). There are many GMPs which a food safety manager must effectively manage. The design and management of a facility and the surrounding environment is important to minimize the risk of contamination in food products. The materials used to construct the facility, its design, maintenance, and location should all be taken into consideration when developing and implementing a food safety management system. Similarly, there are GMPs pertaining to other critical food safety elements such as control of food plant operations, transportation, appropriate labeling, and employee training.

This learning module covers a subset of GMP requirements described in the Codex Alimentarius General Principles of Food Hygiene. The following topics will be discussed:

- Establishment – Design and Facilities
- Control of Operation
- Storage and Transportation
- Product Information and Consumer Awareness
- Training

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# Module Overview

Before an effective food safety management system such as Hazard Analysis and Critical Control Points (HACCP) can be implemented, the company must be operating in accordance with good hygiene and good manufacturing practices. These prerequisite programs (PRPs) provide the strong foundation necessary to ensure the food facility has an overall environment that is conducive for producing safe food. These PRPs must be in place before effective food safety management programs can be implemented.

The figure on the right illustrates the critical importance of GMPs and other PRPs. These programs are the foundation of an effective food safety management system.



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# Section 1-1: Establishment – Design and Facilities

# Section Overview

The management of a facility and the surrounding environment is important to minimize the risk of contamination in food products. The materials used to construct the facility, its design, maintenance, and location should all be taken into consideration when developing and implementing a food safety management system.

This learning module covers the requirements for effective control and management of your facility's environment. The following topics will be discussed:

- system development
- location
- maintenance of surroundings
- design and layout
- facility construction
- maintenance of facilities
- storage
- windows and doors
- lighting
- monitoring of facilities

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# Learning Objectives

At the conclusion of this section, the learner will be able to:

- list primary considerations when developing a system to effectively manage food establishment design and maintenance of facilities,
- list and describe factors to consider when evaluating the location of a food establishment,
- list and describe requirements for maintenance of the environment surrounding a food establishment,
- list the primary factors to consider in designing a good facility for safe food production, and describe the manner in which these factors can reduce the risk of contamination,
- list and describe appropriate considerations for materials and equipment used in the food establishment and how these choices help minimize the risk of product contamination,
- list key considerations for maintenance of the facilities at the food establishment,
- describe considerations for safe storage and transportation practices,
- describe appropriate design considerations for windows and doors to minimize food product contamination,
- describe the lighting requirements to facilitate safe working conditions and to enable effective food safety management, and
- list the primary considerations for effective monitoring of the facility to ensure it meets safety requirements.

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# System Development

As the person responsible for food safety within the factory it is important to develop a system to:

- train and monitor the staff on the maintenance of the facility surroundings
- train and monitor the staff on the internal maintenance of the facility
- monitor the design and layout of the facility
- monitor the materials used in the fabrication of the facility
- monitor doors, windows, and lighting used in the facility

Any system will have to be clearly and concisely documented and communicated effectively to appropriate staff within the company.

It is important to work closely with key company staff to ensure that they clearly understand the importance of such systems and the ways they can influence effective compliance.

Since the responsibility for food safety rests with you, direct verification of systems is extremely important. You should personally monitor activities on a regular basis and record your findings.

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# Location

The site where the food facility is located is extremely important for the safety and quality of products. Products can easily be affected by factors outside of the facility. For example, activities carried out in adjoining premises may result in:

- dust
- smoke
- odor
- volatile compounds
- shared drainage
- harborage for pests

Proximity to rivers or waterways may also create problems, such as the potential for contamination in the event of flooding.

If you are unable to change the location of the facility or new factors which could affect the facility are introduced, you must put control measures in place to ensure that the safety and quality of the products are not compromised by the local environment.



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Location

## The Control of Atmospheric Contaminates

Atmospheric contaminants such as dust, smoke, odor and volatile compounds can have an adverse affect on the safety and legality of your product.

If the local environment has any processes where these atmospheric contaminants can enter the facility and compromise the safety and quality of the products, then effective controls must be put in place.

Appropriate screening and sealing around doors and windows can help minimize the potential of dust entering the factory.

Where atmospheric contaminants such as odors that cannot be controlled by screens are the issue, then other controls can be used. You can install a ventilation system or move the vulnerable product to an area in the factory where contamination cannot compromise the product, for example, a sealed ventilated internal room.



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Location

## Shared Drainage

Drainage that is shared with other local companies or private dwellings can be a serious product safety issue if the drainage system is inadequate or faulty.

If the system is inadequate for the number of users or the types of materials placed into the drainage system, then blockages can result. This can create problems such as effluent overflowing into the facility and cause a serious contamination hazard or odor problem.

Faulty drainage systems must be repaired to prevent any blockages or odor issues. You should consider new drainage systems if shared drainage is the issue.



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Location

## Harborage of Pests

The location of the facility and its surrounding area is important since pests may become a problem. Facilities that are near a water source or heavily-vegetated overgrown areas will have an increased risk of pests entering the facility, particularly at certain times of the year when their food sources and shelter may become scarce. If you are unable to change the location of the facility, then be sure to deny pests harborage. You must control and manage the external areas around the facility to reduce the likelihood of pest ingress and possible infestation. Pest control measures such as baiting for rodents at the perimeter of the factory should be considered.

When planning pest control measures, you also need to consider waste management procedures and the storage of materials used at the facility.



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# Maintenance of Surroundings

Maintaining a factory's external conditions is also important to prevent the harborage and possible ingress of pests. Also, it is important in regards to eliminating possible contamination from any movement of product through the factory site.

You also need to consider the visual impressions the site creates. The proper care of the external condition of a factory helps you maintain customer respect and continued high staff morale.



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Maintenance of Surroundings

## Storage of Equipment and Waste

Where possible, there should be no external storage of equipment or materials. However, when equipment needs to be stored outside the factory it should be stored in a manner to eliminate any risk of contamination of the product, carefully inspected on a regular basis, and cleaned before use.

In some cases, materials such as packaging may be stored externally but you should take measures to protect the material from contamination. The material must be regularly monitored for contamination by foreign materials or infestation by pests.

Where raw materials are stored in silos external to the production area, these need to be maintained to the appropriate hygiene standards, protected against pest infestation, and regularly inspected.

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Maintenance of Surroundings

## Maintenance of Roads, Yards, and Parking Areas

Roads, yards, and parking areas must be maintained to an appropriate standard to prevent contamination of products.

Particularly in dry areas, roads, yards, and parking lots can have problems with dust which can be swept up by vehicles and blown into the facility. Keeping these areas free from a build-up of grit and dust will significantly reduce the risk of contamination. Good maintenance of these areas will also reduce the risk of staff carrying any contamination on shoes or clothes into the food production areas.

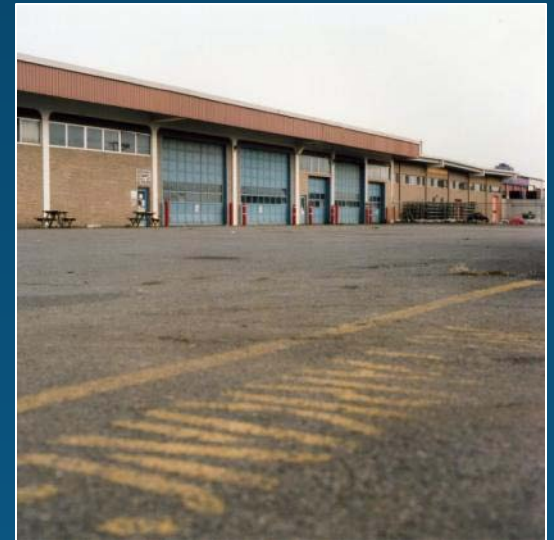


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Maintenance of Surroundings

## Drainage and Treatment of Waste

Surface water drainage should be designed so that the surface water is diverted away from the facility as quickly as possible. Correcting any drainage problem is particularly important where high levels of rainfall occur. There should be no area in close proximity to the facility where surface water doesn't drain appropriately and is able to accumulate.

Any waste treatment and disposal systems should be outside the facility and as far away as possible from the production and storage areas. The waste treatment and disposal systems should be operated properly and pose no risk of product contamination either by atmospheric contamination, physical contamination, or pest infestation.

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# Design and Layout

The design and layout of a facility is important to minimize the risk of product contamination due to poor personal hygiene practices or exposure to microbiological, chemical or physical hazards. This section shows how good facility design and layout can reduce the risk of contamination. The areas considered in this section include:

- equipment placement and storage of materials
- points of entry
- hand-washing facilities
- toilet facilities
- water supply and waste water systems
- the design of the facility to reduce contamination of products.

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Design and Layout

## Equipment Placement and Storage of Materials

The facility should be clean and tidy with adequate space to enable correct use and maintenance of the equipment. If a lack of space results from workstations being untidy or restricted, or equipment itself being too large for the work area concerned, then it may be difficult to clean these spaces adequately.

Factory housekeeping practices should ensure that materials are stored away from workstations so these areas are kept tidy and unrestricted to facilitate adequate cleaning.



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Design and Layout

## Points of Entry

Where possible, the facility should have a single point of entry for staff and a single point of entry for raw materials and ingredients. This will minimize the amount of cross contamination between staff, raw materials, and finished product. If your facility has more than one point of entry, then you should consider cordoning off the other points so staff and visitors use only one entrance.

Good practice dictates that all staff facilities such as changing rooms and canteens should be in the immediate proximity of this entrance.

All visitors to the factory should be directed to this point of entry.

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Design and Layout

## Hand-Washing Facilities

Staff and visitor hand-washing procedures are extremely important. Hand-washing is considered the most important aspect of personal hygiene to minimize the risk of microbiological contamination.

Hand-washing facilities should be adequate in number and be supplied with hot and cold water, soap, and have appropriate provisions for hand drying. Single use towels or hot air blowers are acceptable means of hand drying, but multi-use towels are not acceptable due to the potential for cross-contamination.

The number of wash basins should reflect the number of staff working at the facility. In many countries there are legal requirements for the ratio of the numbers of wash basins to the number of staff.

The location of wash basins is also important. Staff members are more likely to use the wash basins if they are situated at the entrance to a production area. Hand-washing facilities should also be placed in particularly dirty areas or high-risk areas so that staff have the opportunity to wash their hands on a regular basis.



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Design and Layout

## Toilet Facilities

There should be an adequate number of toilets for the number of staff working in the facility.

The toilets should not open directly into a food preparation area. Jurisdictions typically have building codes which specify the required characteristics of toilet facilities, including the numbers of doors or other barriers between the toilet and food preparation areas.

The toilet areas also should have hand-washing facilities supplied with hot and cold water, soap and hand-drying equipment available. Signs informing staff of the need to wash their hands before leaving the toilet area should be placed in easily visible places.

The toilet area should be cleaned and disinfected on a regular basis. It is good practice to post a cleaning schedule so that there is a record of when cleaning has taken place. As a food safety manager, you should ensure these areas are inspected and monitored on a regular basis to verify the effectiveness of the cleaning procedures.

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Design and Layout

## Water Supply and Waste Water Systems

The factory water supply should be adequate with respect to quantity and quality of water, and always be derived from an appropriate source. Water that comes from a private source, such as a well or natural spring, must be tested for microbiological quality and other possible contaminants. Good practice dictates that water must be tested at least once per year if it is derived from a properly constructed well or treated municipal water source, but actual testing frequencies for water by a facility should be based on a risk assessment. Any problems with the safety of the water supply should be corrective immediately.

Waste water systems from the factory should be adequate in size and design to prevent the possibility of used or foul water flowing back into the factory and causing significant risk to health.

If production increases at your facility, make sure the incoming water supply is able to accommodate this increase. Measures may need to be taken to ensure the quality and quantity of water is still adequate. Adequacy of waste water systems must also be considered if there is an increase of waste water volume produced by the facility.

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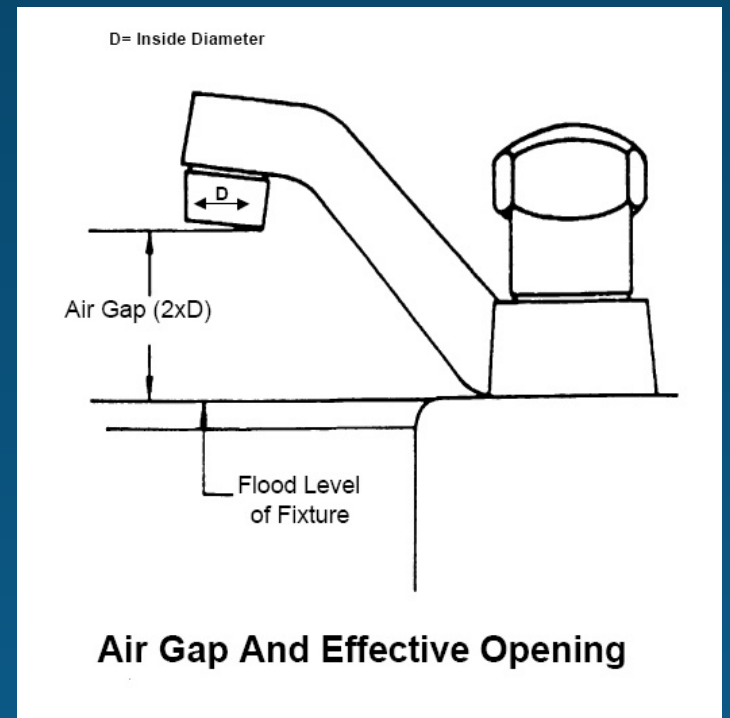
## Design and Layout

# Backflow Prevention

Backflow is defined as the flow of water or other liquids, mixtures, or substances into a potable water system from any source, other than the intended source.

A cross connection is defined as any connection or structural arrangement between a potable water system and a non-potable source, liquid or otherwise, through which backflow can occur.

Water systems must be designed in a manner that minimizes the risk of backflow of non-potable water or waste into the potable water system. This design will typically require the use of air gaps, air breaks, and backflow prevention devices.

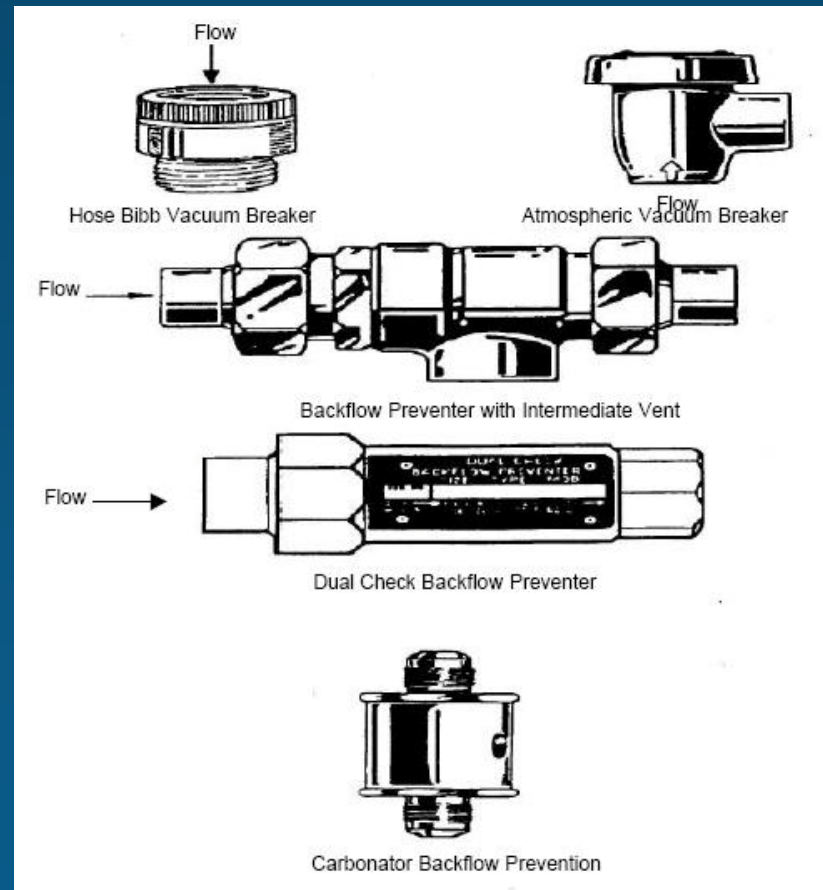
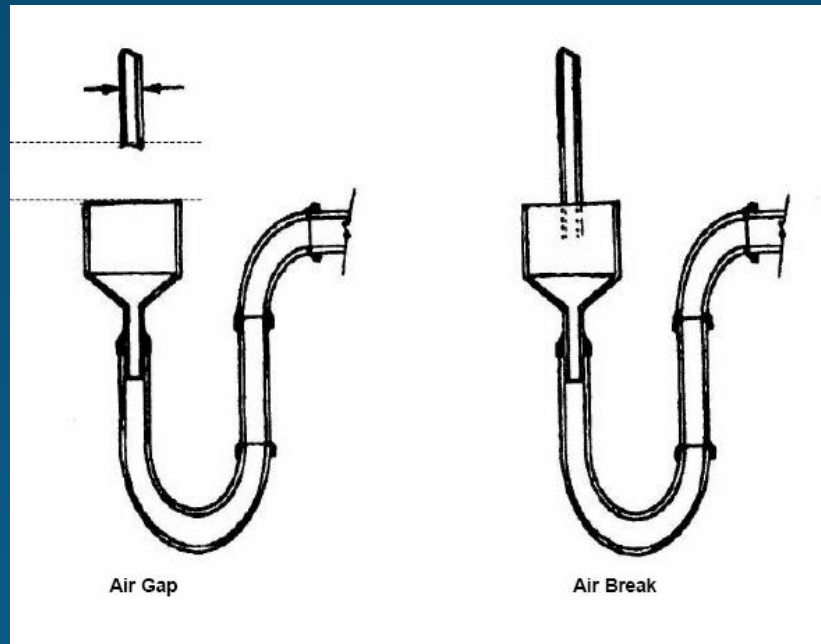


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Design and Layout

# Backflow Prevention

Examples of an air gap or air break in a waste line, and backflow prevention devices.



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Design and Layout

## Design to Reduce Contamination of Products

A facility can be carefully designed so that the number of possible food contact surfaces is reduced, therefore minimizing the risk of product contamination.

The physical separation of foods, either by the use of designated areas or the movement and control of packaged raw materials, will also significantly reduce the risk of cross-contamination.

Where possible, workflow should be linear and progress in a uniform and logical direction from raw material to finished product. The movement and separation of staff is an important factor in reducing risk of contamination, particularly in relation to high-risk foods or where allergen control is deemed important. Good practice procedures such as color-coding the different work areas, having staff wear protective clothing, and implementing quick and thorough cleaning of equipment and process utensils are policies staff must follow.



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# Facility Construction

The materials used in the construction of the facility also are fundamentally important to minimize the risk of product contamination. Inappropriate or inadequate materials used in the facility construction can lead to product contamination or a reduction in quality of products.

This section looks not only at the construction of elements in a facility such as floors, walls and ceilings, but also at the equipment and the ventilation systems used within the facility.



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Facility Construction

## Materials and Design of Floors, Walls, and Ceilings

Ceilings should be smooth, clean, fire-resistant, non-flaking, light-colored, covered at wall joints, and easy to clean.

Walls should be clean, smooth, impervious, non-flaking, durable, light-colored, and capable of being thoroughly-cleaned or disinfected. Surfaces should be resistant to spillages, chemicals, grease, heat, and impact.

Floor surfaces should be clean, durable, non-absorbent, anti-slip, free from crevices, and capable of being effectively cleaned. Depending upon the products processed, floors may need to be resistant to acids, grease, and salts, and, where necessary, should slope sufficiently for liquids to drain to trapped gullies.



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Facility Construction

## Contamination from Condensation

Some food manufacturing processes such as canning or cooking can lead to the generation of a large amount of condensation in the facility. This condensation may represent a high risk of contamination if it drips from pipes or other surfaces into unprotected product. Appropriate measures should be in place to prevent this source of contamination. If possible, no pipes should be located directly over unprotected products in order to eliminate the contamination risk. If this is not possible, product should be suitably protected by the use of covers.



Note that any surface which from which condensation can drip into an open food product is generally considered to be a “food contact surface.”

Condensation also poses a significant microbiological risk, particularly in relation to high-risk foods. Food should be protected from any condensate formed from chilled air units.

Where processes such as steam heating may cause high levels of condensation, appropriate ventilation should be used to control and vent steam away from product.

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Facility Construction

## Ventilation

Where there is a risk of foreign body contamination, such as dust or dirt particles or atmospheric contamination from odors or volatile compounds, there should be adequate ventilation systems in place.

When designing ventilation systems, you should take care to ensure that there are screening or filtration systems incorporated into the ventilation systems to prevent other contaminants such as insects from entering the factory.

When ventilation systems are incorporated into the factory, these should be included in the factory cleaning schedules.

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Facility Construction

## Protection from Pests

The construction of the building and its maintenance should be such as to prevent the entry or harborage of pests such as rodents, insects, and birds.

Building materials that are joined or seamed should have no gaps. Piping or ducting entering or exiting the factory should be sealed.

The actual building design should not encourage roosting areas for birds or have large voids which are difficult to access and clean. For example, suspended ceilings allow food particles to accumulate and thus create ideal conditions for pests such as insects to live and breed without hindrance.



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## Facility Construction Equipment

Equipment used in the facility should be able to be easily and effectively cleaned and properly maintained. There should be adequate space around the equipment to allow routine maintenance and cleaning. If the facility does not have adequate space around each piece of equipment, then it should be easily moveable to create space when maintenance and cleaning are required.



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Facility Construction

## Food Contact Materials

All food contact materials should be non-corrosive and made of non-toxic materials. Most suppliers of food processing equipment will produce a certificate of conformance with the relevant legal requirements for food contact materials.

The equipment should be of sound construction, durable, easy to maintain and clean and, where appropriate, easy to disinfect.

All equipment which comes into direct contact with food should be regularly inspected to ensure that it does not pose any risk to food safety. With respect to high-risk foods, it is good practice to carry out regular swab checks to assess the microbiological populations on a particular work surface. The presence of significant populations of microorganisms on food contact surfaces could indicate that cleaning and disinfection procedures may need to be reassessed.

There are occasions when, if a piece of equipment that comes into direct contact with food has a highly damaged surface, the prescribed cleaning processes may be inadequate to fully sanitize the surface of the equipment. A good example is a meat cutting board where general cleaning processes undertaken during a production period are ineffective. In such cases, the equipment or utensil should be replaced, resurfaced or refurbished, as appropriate.

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Facility Construction

## Seams of Food Contact Surfaces

Where there are seams or joints in food contact surfaces, these should be smoothly bonded and, where appropriate, sealed. Poor seams that are not smoothly bonded can provide an environment where food residues can accumulate and support the growth of bacteria. These areas are notoriously difficult to clean properly, so the risk of microbiological hazards significantly increases.

A primary area of concern involves food that is processed or conveyed within closed pipe systems. Poor internal surfaces formed around pipe seams and joints which cannot be appropriately cleaned can provide an environment where food residues accumulate and continuously contaminate food with bacteria. For this reason, it is particularly important to ensure that equipment and piping in food facilities doesn't have any "dead ends" or other areas where food residues can be trapped.



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# Maintenance of Facility

As the manager responsible for food safety, you should ensure that regular inspections are carried out in relation to the condition of the facility and equipment. In the event it is determined that conditions in the facility could compromise food safety, you should undertake maintenance or cleaning action immediately to resolve any issues.

To ensure these inspections are carried out on a defined frequency, it is good practice to develop and maintain a schedule specifying where and when areas must be inspected for repair and the effectiveness of cleaning and sanitizing.



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Maintenance of Facility

## Sanitary Condition and Good Repair

Understandably, great emphasis is placed on food contact surfaces. However, it is important also to ensure that the facility's service utilities such as pipelines and service ducting are maintained to a good state of cleanliness and kept in good repair. Scheduled inspections and spot checks of the facility will ensure that hygiene is maintained to an appropriate standard.

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Maintenance of Facility

## Pest Prevention

Pests or any other animals should not be allowed to enter the facility. There should be an effective pest control system in place, but such controls will be compromised if the building becomes damaged or measures to prevent pest ingress, such as window screens or drain traps, are damaged or removed.

Staff should be encouraged to alert you as soon as possible of any damage to the building fabrication or equipment, thus allowing you to take corrective action as soon as possible.



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Maintenance of Facility

## Cleaning and Disinfection of Food-Contact Surfaces

The cleaning and disinfection of all food-contact surfaces must be undertaken on a pre-determined cleaning schedule, or as required to minimize the risk of contamination.

Good practice dictates the development of detailed cleaning schedules which specify what, how, when, and by whom food contact surfaces are cleaned and disinfected. It is imperative as part of the cleaning and disinfection process that you verify that cleaning and sanitation procedures are effective and expected levels of cleanliness have been achieved.



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# Storage

As a food safety manager, your attention should be focused on the production areas of the factory. However, product storage areas are equally as important since incorrect storage can pose a risk to the product and the factory itself. The control of storage areas and product does not just include raw materials; it also involves the finished products, transportation, and waste storage.



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Storage

## Storage of Raw Materials and Finished Products

The controls that exist for materials in the production area should be the same for raw materials. Raw materials and ingredients must be protected from contamination by physical, chemical, and microbiological contaminants, for they will have a significant effect on the finished product's quality, safety, and legality. Your company will also experience significant commercial loss if raw materials are destroyed or if contamination of raw materials impacts the safety of semi-processed and finished products.

You must have raw material monitoring processes in place during receipt of products and their subsequent storage. If deterioration in quality or pest infestation is found immediate corrective actions should be taken.

Perishable raw materials and finished products should be stored under conditions, such as refrigeration or freezing, to prevent any potentially pathogenic bacteria from multiplying and to slow down the rate of spoilage. Storage methods must be conducive to following the "first in, first out" rule. Also, specific storage-related procedures should be in place and results recorded.

The finished food products should be stored in a suitable manner so that they cannot become contaminated or perish rapidly. If possible, finished products should also be stored away from raw materials since contact could lead to post-process contamination and, in some cases, pose a significant risk to health.

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Storage

## Transportation

A finished product can be compromised by inadequate handling procedures from factory storage areas to its transportation vehicle. It is good practice for there to be minimal distance between the finished product storage location and the transport vehicle loading dock. It is also good practice to have the transport vehicle pick up the product inside the facility to prevent outside atmospheric conditions from spoiling the product. The use of properly sealed loading docks is an example of effective practice in this regard.

Transportation vehicles, trailers and containers must not present a potential source of contamination for food products, and should be washed and sanitized as frequently as necessary to ensure potential food hazards are effectively controlled. You should be aware of the history of the vehicles, trailers and containers used to transport your food products, as some foodborne illness outbreaks have been caused by contamination resulting from prior loads.



Photo by Adrian and Janet Quantock

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Storage

## Waste Storage, Removal, and Protection Against Pests

Waste within the facility should be stored in closed containers and segregated from processing areas. It is good practice to have a policy in place to identify waste as soon as possible and remove it from the production line to reduce the risk of contamination.

The waste that is being stored should be protected from pest infestation, which means keeping it in rodent-proof containers that are fully closed to prevent insect attraction.

The amount of waste being produced by the facility should be monitored since a build-up could mean an inadequate number of waste receptacles, resulting in waste being stored incorrectly.



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# Windows and Doors

Windows and doors are probably the most vulnerable part of the facility with respect to pests and other contaminants entering the factory. This section covers the measures that you can take to reduce the risk of pests and contaminants entering the facility, including proofing, screening, and a procedure for closing doors.



Photo by Jóhann Heiðar Árnason

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Windows and Doors

## Proofing and Screening

Pest-proofing or screens should be used on all windows and doors in the facility. These screens should be easy to clean and cleaned regularly to prevent contamination. If there is an issue with dust coming into the facility, then dust screens should be added to all windows and doors.

Doors should not have significant gaps at the bottom since rodents can easily enter the facility. A rule used is that “if a pencil can fit under the door, then so can rodents.” Instead of replacing the door completely, pest excluders can be attached to the door, preventing pests from entering the facility.

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Windows and Doors

## Glass Contamination Prevention

Modern food facilities very rarely have glass windows as part of their design because of the risk of glass contamination in finished food products. If your facility has glass windows then make sure that there is adequate protection against breakage. You can do this by covering them with a screen or a clear plastic film so that if there is a breakage, no glass is deposited into the facility.

You should put in place a procedure that any broken glass is reported to you or supervisory staff immediately so that adequate steps can be taken to prevent contamination and guard the safety of staff and customers.

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Windows and Doors

## Door Closure Procedure

In any food production facility, it is bad practice to have doors open for long periods of time. Since factories are usually busy places and doors are used frequently, it is easy for staff to forget to close doors behind them. Wherever possible, external doors should be self-closing or on a timed switch where they close when not in use.

Doors fitted with curtains to prevent the ingress of flying insects or birds are not 100% effective, so doors should be fully closed when not in use.



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# Lighting

Adequate lighting with respect to the level of luminosity and light color is necessary to provide safe and satisfactory working conditions for staff and to allow essential activities such as cleaning and raw material inspection to take place under optimum conditions.

When reviewing the position of lighting in your facility, you should eliminate any possible contamination risk with respect to breakage. Fluorescent bulbs which can be easily damaged could break and contaminate product.

This section describes considerations for lighting and procedures to be taken to minimize the risk of glass contamination from lighting units in the facility.



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Lighting

## Adequate Lighting

The intensity of lighting should be appropriate in relation to the activities undertaken within that area of the factory. Low levels of lighting can be a safety issue for staff and also allow pests such as rodents to remain undetected. Furthermore, inadequate lighting can hinder the effectiveness of cleaning and disinfection procedures.

Certain steps during production, such as the visual inspection of raw materials for possible contaminants, may require specific strategically-placed lighting units to ensure an optimum level of luminosity and color at all times of day. The use of natural or low-level lighting for such processes would mean that workers at night or workers with low levels of natural light would not achieve effective inspection or control of contamination.

The color of lighting is important, particularly when inspecting for color defects in products such as fruits and vegetables. The color of some light sources may prevent inspection staff from identifying product defects.



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Lighting

## Lighting in Storage Areas

Lighting in storage areas is sometimes inadequate since these areas are often seen by factory management as being non-essential. Storage areas, however, must be regarded as high risk with respect to pest infestation and the monitoring of defective products (i.e. damaged packaging and product spoilage).

Pests, such as rodents, do not like well-lit areas, so it is good practice to have adequate levels of lighting in areas where rodents could be a risk. If you are storing raw materials which may be prone to insect infestation, you will need good lighting in the storage areas to monitor for any possible infestations.

In worse cases, inadequate lighting may impede the inspection or monitoring process and could lead to pest infestation throughout the factory.

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Lighting

## Lighting Maintenance Procedures

Maintenance procedures should be in place for lighting units. It is important for maintenance staff to be aware of the risk of product contamination by glass if these procedures are not followed. To minimize any risk, maintenance on lighting units should occur only when there are no production activities taking place. It is good practice to document maintenance procedures and make staff aware of these procedures. It is also good practice to have procedures in place in the event of light units breaking, either when production is being carried out or during lighting maintenance.

All glass lighting units such as fluorescent bulbs should be protected by diffusers which will prevent breakage under normal use. These diffusers, however, should be regularly cleaned as part of the factory hygiene and cleaning schedule.



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# Monitoring of Facilities

Monitoring is particularly important to ensure that the facility continuously meets requirements. Regular inspections are important and a schedule to do so should be in place. Problems unnoticed during daily production may go undetected and cause significant contamination issues. A regular inspection should address things such as ventilation systems, overhead pipes, or external building fabrication that may not be noticed on a daily basis. If problems are found, the maintenance staff should be notified immediately and corrective actions taken as soon as possible. As always, monitoring procedures should be documented.

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