

Equipment Design and Construction Standards

Maintaining Site Requirements for Equipment Design and Construction

Development

To define detail, scope and purpose.

Development

This information can be used to develop food safety and quality programs that meet the requirements of modern Regulatory, Customer and Industry Standards:

- We take the time to explain the expectations and requirements of food safety and quality compliance as these relate to your food safety and quality programs.
- You may choose to use our Premium Resources to build, enhance or upgrade your food safety and quality program.
- We encourage you to share this webpage with any food compliance associates and peers you believe may benefit from our commitment to providing our users with user friendly information and resources to achieve superior Food Compliance Culture.
- We welcome your suggestions for additions of general or specific content through the haccp.com Contact Page.

Key Definitions for Equipment Design and Construction Standards

Commissioning: The process of verifying and documenting that newly installed or modified equipment has been installed correctly and operates as specified before it is used for production.

Equipment: Machinery, apparatus, components, and any other articles intended for use in a food business.

Food Contact Surface: Any surface of equipment, utensils, or containers that comes into direct contact with food, or from which food or moisture may drain, drip, or splash onto food.

Food Grade Lubricant: A lubricant that is formulated and suitable for use on equipment where incidental contact with food may occur.

High Care Area: A segregated area of a food business where additional controls are applied to minimise the risk of contamination of ready to eat foods that will not receive a further lethal treatment.

Preventative Maintenance: Scheduled maintenance activities carried out to prevent equipment failure or deterioration before it occurs.

Reactive Maintenance: Maintenance carried out in response to equipment failure, damage, or identified defects.

Equipment Design and Construction Standards Development

When considering the development, documentation, and implementation of Equipment Design and Construction Standards within food safety and quality management systems, the following information should be considered to ensure effective outcomes:

About Equipment Design and Construction Standards



Equipment in food areas should be built from materials that are durable, smooth, and easy to clean.

Equipment used within the food sector must be suitably constructed and maintained to ensure it does not contribute to the production of unsafe foods. General requirements for Food Equipment include:

- Construction from materials that are impervious and resistant to corrosion or breakdown;
- Food contact surfaces that are smooth and impervious to facilitate appropriate levels of cleaning and sanitation whilst avoiding foreign object risk;
- Appropriate standards of welding and fabrication for metal or alloy fittings and fixtures;
- Compliance with Legal requirements where applicable;
- Hygienic design that avoids crevices, dead spaces, and hollow sections where food residue, moisture, or pests may accumulate;
- Installation that allows access for cleaning, maintenance, and inspection;
- Use of food grade lubricants and avoidance of other operational chemicals that may introduce risk.

Specification, Commissioning and Validation of Equipment

When choosing a piece of equipment for use within the Food Sector, the following Specification, Commissioning and Validation elements should be considered (and recorded) to achieve 'best practice' outcomes for all new, existing, or refurbished equipment items.

The Specification, Commissioning, and Validation of equipment for the food sector should be conducted and recorded to cover:

- Legal compliance;
- Industry compliance;
- Food safety and quality standard compliance;
- Need for alterations or tailored commissioning;
- Construction of suitable materials (including Contrasting Coloured risk materials);
- Verified composition of materials such as Stainless Steel (by grade);
- Suitability and Risk Assessment of associated Chemicals (including Food Grade Lubricants);
- Hygienic design and accessibility for cleaning and inspection;
- Supplier documentation for materials in contact with food;
- Requirements for Cleaning and Sanitation (including prescribed Cleaning Methods or Chemicals for use);
- Suitability for use within specific environments (such as wet or humid environments);
- Workplace Health and Safety Compliance;
- Operational Capability for Food Safety;
- Operational Capability for Food Quality;
- Operational Capability against Capacity;
- Anticipated Lifecycle and Longevity.

The Specification, Commissioning, and Validation of equipment for the food sector should be conducted by a multidisciplinary team to ensure the highest level of outcomes.

Hygienic Design Principles



Smooth, seamless surfaces are easier to clean and leave fewer places for residue to collect.

Equipment for the food sector should be designed so that it can be effectively cleaned, inspected, and maintained. Hygienic design principles to consider, consistent with ISO 14159, include:

- Surfaces that are smooth, free of pits, cracks, and crevices, and accessible for cleaning and inspection;
- Internal corners and edges with radiused finishes rather than sharp angles;
- Continuous, smooth welds rather than spot welds or overlapping joints that can trap food residue;
- Hollow sections that are sealed, or fully drained and open for cleaning, so that moisture, residue, and pests cannot accumulate;
- Self-draining surfaces and pipework without dead legs, so that liquids do not pool;
- Fasteners, bearings, and fittings that are positioned or protected to prevent contamination of food and food contact surfaces;
- Equipment that can be dismantled for cleaning, or is designed for effective cleaning in place;
- Guarding and framing that protects fragile components from breakage.

Materials in Contact with Food

Materials used for equipment, utensils, and containers that contact food must be suitable for their intended use. Materials considerations include:

- Stainless steel of a verified grade that is appropriate to the product, cleaning chemicals, and operating environment;
- Gaskets, seals, and elastomers that are food grade, durable, and resistant to the product and cleaning chemicals;
- Plastics that are food grade, durable, and where practical, detectable by foreign object detection systems;
- Avoidance of materials that may flake, corrode, absorb moisture, or react with food, such as untreated wood, unprotected mild steel, or chipped coatings;
- Supplier declarations of compliance confirming that materials are suitable for food contact;
- Food grade lubricants for any equipment where incidental contact with food is possible.

Any change to materials, including replacement parts, should be assessed against these requirements before use.

Reducing Risk by Engineering it Out

In many cases, new, existing, or refurbished equipment may require the adoption of risk reduction strategies to reduce the risk of such equipment contributing to the production of unsafe foods.

For example, if a piece of equipment were to include hard plastic fixtures or fittings that could be replaced with another material such as stainless steel, this would be of benefit by removing such hazardous plastic risk. Similarly, if hard plastic fixtures or fittings were required for the safe operation of such equipment, the hard plastic fixtures or fittings could be protected by stainless steel guarding or framing to significantly reduce the risk of breakage. Where plastic cannot be avoided, consider materials that can be detected by metal detection or X-ray equipment.

Where Equipment Meets Premises



Where conveyors pass between areas, the equipment and surrounding structure must be easy to clean and well sealed.

Where equipment meets the Premises, for example at a through wall fixture where a conveyor belt transits from a Low Risk to a High Risk or High Care area, such equipment should be positioned and/or moveable to facilitate required Cleaning and Sanitation Tasks.

Similarly, where Equipment can't be positioned and/or moveable within its position, it should be appropriately sealed and maintained to prevent the buildup of food residue. In this case, seals between the premises and the equipment should be to the same standard as for the general premises.

Equipment Maintenance



Planned maintenance helps keep equipment safe to use and suitable for food production.

Equipment maintenance should be facilitated as part of a proactive Preventative and Reactive Maintenance Program, which should include:

- A maintenance schedule that identifies each equipment item, the tasks required, and the frequency;
- Control of tools and maintenance materials, including food grade lubricants, to prevent contamination;
- Clearance and sign-off by a nominated person before equipment is returned to production;
- Controlled, recorded, and timely replacement of any temporary repairs.

You may wish to visit the Preventative Maintenance and Reactive Maintenance section of haccp.com for examples of best practice applications for this food safety and quality system element.

Equipment, Utensils and Containers

All equipment associated with food production must be appropriately constructed and maintained with food safety as the primary concern. The installation and use of such equipment also need to be addressed as food safety can be compromised through an improper application. Important equipment requirements include documentation and record-keeping, monitoring equipment for maintenance requirements, including the targeting of heavily worn or corroded areas, incomplete construction or cracks and pitting, cleanliness and calibration, staff training in the use of specific equipment, design of equipment for the intended purpose, and effective cleaning and sanitising.

Equipment, utensils, and containers other than single-use containers and packaging coming into contact with food should be designed and constructed to ensure that they can be effectively cleaned and sanitised, and maintained to avoid the contamination of food. Equipment and containers should be made of materials with no toxic effect within the scope of their intended use. Utensils, equipment, and containers should be durable and movable or capable of being disassembled to allow for maintenance, cleaning, disinfection, monitoring, and, for example, to facilitate inspection for pests.

Working surfaces that come into direct contact with food should be in sound condition, durable, and easy to clean, maintain and sanitise. Working surfaces should be made of smooth, non-absorbent materials, and inert to the food, detergents, and disinfectants under normal operating conditions.

Equipment Segregation to Prevent Contamination

Where a facility processes both raw and cooked food products, segregation of raw and cooking equipment is considered the best practice to prevent equipment-related cross-contamination. Where equipment is unavoidably used for both cooked and raw foods it must be cleaned and sanitised correctly before swapping for use between the two.

Equipment should be located so that it:

- Permits adequate maintenance and cleaning;
- Functions as per its intended use; and
- Facilitates good hygiene practices, including monitoring.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Development requirements in relation to their items.

Regulatory and Industry References

The following references provide further guidance on the design and construction of food equipment. Always check that you are working to the current edition:

- Australia New Zealand Food Standards Code, Standard 3.2.3 Food Premises and Equipment;
- Codex Alimentarius, General Principles of Food Hygiene (CXC 1-1969), available through the Codex Codes of Practice listing;
- ISO 14159, Safety of machinery, Hygiene requirements for the design of machinery.

Equipment Design and Construction Standards Development Key Points

- Equipment Design and Construction Standards programs must be developed to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The Senior Management of your business facilitates a commitment to ensuring adequate resources to the development of your Equipment Design and Construction Standards program;
- Should you require additional resources for the development of Equipment Design and Construction Standards program elements, please discuss this with the relevant Senior Management representative;
- A properly developed Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly developed Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Documentation

To establish the developed detail in a viewable format to facilitate information.

Documentation

Document: A document provides guidance and/or direction for performing work, making decisions, or rendering judgments that affect the safety or quality of the products or services that customers receive.

Documented policies, procedures, work instructions, and schedules form the basis of any food safety and quality management system. The following documentation formats may be considered to ensure ongoing compliance with specified requirements for Equipment Design and Construction Standards:

- Equipment Design and Construction Standards policy;
- Equipment Design and Construction Standards development procedures;
- Equipment Design and Construction Standards implementation procedures and work instructions;
- Equipment Design and Construction Standards monitoring procedures;
- Equipment Design and Construction Standards corrective and preventative action procedures;
- Equipment Design and Construction Standards verification schedule;
- Equipment Design and Construction Standards verification procedures;
- Equipment Design and Construction Standards validation schedule;
- Equipment Design and Construction Standards validation procedures;
- Equipment Design and Construction Standards training procedures;
- Equipment specifications, drawings, and an equipment register;
- Equipment commissioning and validation records;
- Equipment maintenance schedules and records.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Documentation requirements in relation to their items.

You may wish to visit the Equipment Design and Construction Standards Templates section of haccp.com for examples of Equipment Design and Construction Standards documentation, record, and resource formats commonly applied within food safety and quality systems.

Equipment Design and Construction Standards Documentation Key Points

- Equipment Design and Construction Standards programs must be documented to meet relevant Regulatory, Industry, and Customer standards and requirements;
- All documented Equipment Design and Construction Standards program elements must be controlled to ensure compliance;
- Key documented Equipment Design and Construction Standards program elements should be available to your business team at all times to ensure they can facilitate required tasks;
- A properly documented Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly documented Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Implementation

To facilitate the application of the documentation.

Implementation

Implementation: Implementation is the application of documented food safety and quality system elements into the actual business operation.

The implementation of Equipment Design and Construction Standards within any food business requires genuine commitment from senior management, staff, and visitors to ensure the nominated goals of implementation are achievable on an ongoing basis. It is a step that requires significant planning and consideration of general and specific food business circumstances to ensure the outcomes of Equipment Design and Construction Standards do not negatively impact the safety and quality of the food items dispatched from the business.

Implementation of Equipment Design and Construction Standards must include a clear definition of responsibilities and authorities for all levels of participation by senior management, staff, and visitors to the site.

When implementing Equipment Design and Construction Standards within a food safety and quality system, you may wish to consider the following requirements before completion:

- Communication and display of the Equipment Design and Construction Standards policy;
- Completion of Verification and Validation of Equipment Design and Construction Standards development procedures;
- Availability of Equipment Design and Construction Standards implementation procedures and work instructions;
- Availability of Equipment Design and Construction Standards monitoring procedures and record templates where applicable;
- Availability of Equipment Design and Construction Standards corrective and preventative action procedures and record templates where applicable;
- Availability of the Equipment Design and Construction Standards verification schedule;
- Availability of Equipment Design and Construction Standards verification procedures;
- Availability of the Equipment Design and Construction Standards validation schedule;
- Availability of Equipment Design and Construction Standards validation procedures;
- Completion of Equipment Design and Construction Standards training procedures;
- Completion of product design and development requirements related to Equipment Design and Construction Standards;
- Completion of process design and development requirements related to Equipment Design and Construction Standards;
- Completion of training for team members who have responsibilities and involvement within Equipment Design and Construction Standards;
- Completion of competency approval for team members who have responsibilities and involvement within Equipment Design and Construction Standards.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Implementation requirements in relation to their items.

Equipment Design and Construction Standards Implementation Key Points

- Equipment Design and Construction Standards programs must be implemented to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Your Equipment Design and Construction Standards program must be fully implemented as per relevant documented Policies, Procedures, and Work Instructions;
- The implementation of Equipment Design and Construction Standards requires a commitment to the provision of resources by the Senior Management of your business;
- A properly implemented Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards

and requirements;

- A poorly implemented Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Monitoring

To review, confirm and document evidence of the implementation against documented limits.

Monitoring

Monitoring: Monitoring is the act of reviewing and confirming measurable parameters of a defined process or product status.

Monitoring requirements within food industry sectors are generally identified against limits of acceptability defined within HACCP plans, implementation procedures, and work instructions. Monitoring usually includes some element of record-keeping, which may be maintained manually or through digital systems. It is important to consider that advancements in technology have spawned many systems and processes which are self-monitored and/or self-adjusted when variances are identified. Regardless of the system used, the goal of any monitoring activity is to provide sufficient evidence that any limit of acceptability has been met.

Traditional Equipment Design and Construction Standards monitoring requirements include manual recording and the application of corrective actions when the results of monitoring are found to be outside acceptable limits. Corrective Actions should also generally be strongly linked to the monitoring process where applied to ensure full traceability of the applied actions.

Common monitoring activities and record formats may apply to Equipment Design and Construction Standards:

- Pre-operational Inspection Records: These are often scheduled, conducted, and recorded to confirm that cleaning and sanitation, and the condition of premises and equipment, have been completed as specified;
- Routine monitoring of GMP Prerequisite Programs for all food manufacturing premises is recommended. Daily pre-operational checks allow management and staff to ensure that all items are cleaned, sanitised, and suitably stored before the commencement of daily production;
- Equipment inspection records covering wear, corrosion, cracks, pitting, and damaged or missing parts or fasteners;
- Preventative maintenance task completion records;
- Food grade lubricant use and application records;
- Post-maintenance clearance and sign-off records before equipment is returned to production.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Monitoring requirements in relation to their items.

You may wish to visit the Equipment Design and Construction Standards Templates section of haccp.com for examples of Equipment Design and Construction Standards documentation, record, and resource formats commonly applied within food safety and quality systems.

Equipment Design and Construction Standards Monitoring Key Points

- Monitoring provides real-time confirmation and evidence that your risk-based FS&Q Controls are effectively implemented;
- Equipment Design and Construction Standards programs must be monitored to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Monitoring of Equipment Design and Construction Standards must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Nominated monitoring records for Equipment Design and Construction Standards must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- A properly monitored Equipment Design and Construction Standards program will provide a strong framework

for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;

- A poorly monitored Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Corrective Action and Preventative Action

To apply “real time” interventions to documented monitoring limits.

Corrective Action

Corrective Action: Corrective action is mandatory action to be taken when a deviation to the Quality System occurs, particularly with a Critical Control Point.

Preventative Action: At any step in the process where a hazard has been identified, preventative action must be put into place to prevent recurrence.

Corrective Action and Preventative Action are implemented to ensure that any identified non-conformance issues are documented, investigated, and rectified within appropriate time frames. Corrective action is any action applied to regain control over a product, process, policy, or procedure that has been identified as being non-conforming outside nominated limits of acceptability. Preventative action is any action applied to prevent any identified non-conformance from recurring.

The outcomes of corrective and preventative actions should result in regained process control after effective application. Specified corrective actions are commonly linked to the HACCP Plans and the food business certification process.

Below are Corrective Action and Preventative Action examples which may be associated with Equipment Design and Construction Standards related non-conformance:

- Review of the Equipment Design and Construction Standards policy;
- Review of Equipment Design and Construction Standards development procedures;
- Review of Equipment Design and Construction Standards implementation procedures and work instructions;
- Review of Equipment Design and Construction Standards monitoring procedures;
- Review of Equipment Design and Construction Standards corrective and preventative action procedures;
- Review of the Equipment Design and Construction Standards verification schedule;
- Review of Equipment Design and Construction Standards verification procedures;
- Review of the Equipment Design and Construction Standards validation schedule;
- Review of Equipment Design and Construction Standards validation procedures;
- Review of Equipment Design and Construction Standards training procedures;
- Repair, replacement, or modification of equipment that no longer meets design or construction requirements;
- Removal of equipment from service until it has been repaired and verified as suitable for use;
- Investigation of potential foreign object contamination, including product hold where breakage or missing parts are suspected;
- Re-training in Equipment Design and Construction Standards;
- Review of management review activities to include Equipment Design and Construction Standards as an agenda item;
- Initiation of 'product hold' procedures where safety or quality may be compromised;
- Initiation of a product recall or product withdrawal procedures where investigations show that there is a substantial safety and or quality risk to the released product;
- Contacting stakeholders including customers regarding any confirmed or potential Equipment Design and Construction Standards concerns involving their product.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Corrective Action requirements in relation to their items.

You may wish to visit the Corrective Action and Preventative Action section of haccp.com for examples of best practice applications for this food safety and quality system element.

Equipment Design and Construction Standards Corrective Action and Preventative Action Key Points

- The implementation of Corrective Action and Preventative Action provides confidence that your FS&Q Program is effectively implemented and that FS&Q criteria are being met;
- Where deviations or variations are observed, Corrective Action and Preventative Actions must be facilitated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Corrective Action and Preventative Action of Equipment Design and Construction Standards must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Records of Corrective Action and Preventative Action for Equipment Design and Construction Standards must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- Proper application of Corrective Action and Preventative Action for your Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- Poor application of Corrective Action and Preventative Action for your Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Verification

To review and confirm documented monitoring and corrective actions against documented parameters.

Verification

Verification: The act of reviewing, inspecting, testing, checking, auditing, or otherwise establishing and documenting whether items, processes, services, or documents conform to specified requirements.

Verification is the detailed review of all food safety and quality system elements to confirm that they are effectively developed, documented, implemented, monitored, and reviewed. All food safety and quality system elements, including documented policies, procedures, training, HACCP plans, and their operational applications must be verified on an ongoing scheduled basis. The verification process commonly includes a defined schedule for which verification activities are required, how often they are conducted, who is responsible, and detailed documented procedures for each nominated verification activity.

The general goal of an established verification process is to ensure any systemic non-conformance issues are identified and rectified within an appropriate time frame. When non-conformance issues are identified through the verification process, Corrective Actions and Preventative Actions should be implemented to ensure they do not impact the effectiveness of the food safety and quality system.

The following examples of verification activities may apply to Equipment Design and Construction Standards:

- Review of the Equipment Design and Construction Standards policy;
- Review of Equipment Design and Construction Standards development procedures;
- Review of Equipment Design and Construction Standards implementation procedures and work instructions;
- Review of Equipment Design and Construction Standards monitoring procedures;
- Review of Equipment Design and Construction Standards monitoring records;
- Review of Equipment Design and Construction Standards corrective and preventative action procedures;
- Review of the Equipment Design and Construction Standards verification schedule;
- Review of Equipment Design and Construction Standards verification procedures;
- Review of the Equipment Design and Construction Standards validation schedule;
- Review of Equipment Design and Construction Standards validation procedures;
- Review of Equipment Design and Construction Standards training procedures;
- Review of Equipment Design and Construction Standards performance since the last review and historically;

- Review of equipment inspection, maintenance, and calibration records;
- Visual inspection and cleaning effectiveness checks of equipment, including food contact surfaces;
- Analytical testing of product or process to ensure the effectiveness of Equipment Design and Construction Standards;
- Inclusion of Equipment Design and Construction Standards as an agenda item within the Management Review Process.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Verification requirements in relation to their items.

You may wish to visit the Verification Activities section of haccp.com for examples of best practice applications for this food safety and quality system element.

Equipment Design and Construction Standards Verification Key Points

- Your verification program provides evidence that your FS&Q Controls have worked;
- Equipment Design and Construction Standards programs must be verified to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The verification of Equipment Design and Construction Standards must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Nominated verification records for Equipment Design and Construction Standards must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- A properly verified Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly verified Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Validation

To confirm the documented monitoring or procedural limits.

Validation

Validation: The process of gathering evidence to provide a scientific basis for the documented act of demonstrating that a procedure, process, and activity will consistently lead to the expected results. It often includes the qualification of systems and equipment.

Validation is the provision of evidence to support the limits of control or acceptability for food safety or quality parameters nominated within systemic elements. Limits of control or acceptability are commonly included within documented food safety and quality systems elements such as procedures, HACCP plans, and specifications.

Common sources of validation include regulatory and legislative standards, finished product specifications and customer requirements, industry codes of practice and guidelines, verified and validated research, historical product, and process control outcomes, and analytical testing.

The general goal of an established validation process is to ensure any systemic non-conformance issues are identified and rectified within an appropriate time frame. When non-conformance issues are identified through the validation process, Corrective Actions and Preventative Actions should be implemented to ensure they do not impact the effectiveness of the food safety and quality system.

Validation activities are commonly defined within the verification schedules and procedures of established food safety and quality management systems.

The following examples may apply to validation of the limits of control or acceptability for Equipment Design and Construction Standards:

- Confirmation of nominated food safety and food quality control limits for Equipment Design and Construction

Standards. These limits may apply to regulatory, industry, customer, or finished product specifications;

- Confirmation of analytical testing methods being used to confirm the effectiveness of Equipment Design and Construction Standards and ensure the accuracy of outcomes;
- Confirmation that new or modified equipment has been commissioned and performs as specified;
- Confirmation that materials in contact with food are suitable for food contact, supported by supplier declarations of compliance.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Validation requirements in relation to their items.

You may wish to visit the Validation Activities section of haccp.com for examples of best practice applications for this food safety and quality system element.

Equipment Design and Construction Standards Validation Key Points

- Your validation program provides evidence that your FS&Q Controls will work;
- Equipment Design and Construction Standards programs must be validated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- The validation of Equipment Design and Construction Standards must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Nominated validation records and supporting documentation for Equipment Design and Construction Standards must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- A properly validated Equipment Design and Construction Standards program will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- A poorly validated Equipment Design and Construction Standards program will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.

Training, Competency and Resources

Skills, knowledge and competency requirements to facilitate development, documentation, implementation, monitoring, corrective action, verification and validation of every Food Safety and Quality System Element.

Skills and Knowledge

Skills and Knowledge: Skills and knowledge are attributes of human interactions commonly linked to competency within any specified job-related task.

Training and competency requirements for Equipment Design and Construction Standards must be ongoing, including regularly scheduled reviews to ensure the effectiveness of training and competency outcomes.

Team members who have defined responsibilities regarding Equipment Design and Construction Standards should have knowledge including:

- Basic Equipment Design and Construction Standards requirements;
- Positive outcomes of Equipment Design and Construction Standards;
- Negative outcomes of a lack of Equipment Design and Construction Standards;
- Current Equipment Design and Construction Standards procedures, methods, and techniques;
- General operational, corporate, and social awareness regarding Equipment Design and Construction Standards;
- Regulatory, industry, and customer requirements regarding Equipment Design and Construction Standards.

Team members who have defined responsibilities regarding Equipment Design and Construction Standards should have skills including:

- Competency in basic Equipment Design and Construction Standards;
- Effective application of current Equipment Design and Construction Standards procedures, methods, and

techniques;

- Safe operation, cleaning, dismantling, and reassembly of specific equipment items;
- The basic development, documentation, and implementation of HACCP and Prerequisite Programs within the food industry sector.

Team members who have defined responsibilities regarding Equipment Design and Construction Standards should have access to resources including:

- Equipment Design and Construction Standards training;
- Equipment Design and Construction Standards associations and events;
- Regulatory standards, industry and customer information, and updates regarding Equipment Design and Construction Standards;
- Incidents within the food industry sector regarding Equipment Design and Construction Standards;
- Commitment to Equipment Design and Construction Standards by senior management;
- Suitably qualified food industry professionals with verified experience in Equipment Design and Construction Standards;
- Effective communication systems including email, internet, and phone through which Equipment Design and Construction Standards information can be sent and received within suitable timeframes.

If your food business supplies foodstuffs manufactured to a customer's specifications, it is important to consider any specific Equipment Design and Construction Standards Training, Competency, and Resources requirements in relation to their items.

You may wish to visit the Training, Competency, and Resources section of haccp.com for examples of best practice applications for this food safety and quality system element.

Equipment Design and Construction Standards Training, Skills, and Knowledge Key Points

- Your Training, Skills, and Knowledge program ensures all participating personnel, visitors, and contracted personnel have the required skills and knowledge to effectively facilitate the requirements of your FS&Q Program;
- Training, Skills, and Knowledge programs for Equipment Design and Construction Standards must be facilitated to meet relevant Regulatory, Industry, and Customer standards and requirements;
- Training, Skills, and Knowledge programs for Equipment Design and Construction Standards must be facilitated as per relevant documented Policies, Procedures, and Work Instructions;
- Training, Skills, and Knowledge records for Equipment Design and Construction Standards must be maintained as per relevant documented Policies, Procedures, and Work Instructions;
- Properly applied Training, Skills, and Knowledge programs for Equipment Design and Construction Standards will provide a strong framework for your business to maintain compliance with relevant Regulatory, Industry, and Customer standards and requirements;
- Poorly applied Training, Skills, and Knowledge programs for Equipment Design and Construction Standards will not fully support your business and may contribute to significant non-compliance against Regulatory, Industry, and Customer standards and requirements.



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