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Environmental Health & Safety

Food Preparation Design Standards

Food establishments

The Environmental Health and Safety Director is assigned responsibility for the University food sanitation program and authorized by the Washington Secretary of Health to enforce State Board of Health Rules and Regulations for Food Service, Chapter 246-215 WAC, as they apply to the University of Washington. The Environmental Health and Safety Department (EH&S) works in cooperation with UW Facilities and Service Units to ensure the design, installation and commissioning of food establishments are in accordance with local and state health rules and regulations.

The requirements for plan review can be found in chapter eight of the Washington State Retail Food Code chapter 246-215.

Plans are required to be developed and reviewed by the UW EH&S Department before construction, change of occupancy of existing structure, or a tenant improvement (remodel or renovation). Requirements referenced in this document are based on the UW Facilities Design Standards, Conference for Food Protection, 2016 Plan Review for Food establishments and local building codes.

Plan Review Documents

Proper plan review submittal with the equipment listed and located on floor plans as well as specifications for finish and plumbing schedules will highlight potential problems on paper while allowing for modifications to be made before costly purchases, installations, and construction are performed.

The following is a summary of what should be included in the plan submittal:

- Legible plans at minimum of 11 x 14 inches in size drawn to scale (scale - ¼ inch = one foot)
- Proposed menu, seating capacity, and projected daily meal volume for the food establishment.
- Provisions for adequate rapid cooling, including ice baths and refrigeration, and for hot and cold-holding of Time/Temperature Control for Safety (TCS) food.
- Location of all food equipment. Each piece of equipment must be clearly labeled, marked, or identified. Provide an equipment schedule that identifies the make and model numbers and listing.
- Equipment shall be certified or classified for sanitation by an ANSI accredited certification program (when applicable).
- Location of all required sinks: Handwashing sinks, Warewashing sinks, Utility sinks and Food preparation sinks (if required).

- Auxiliary areas such as storage rooms, garbage rooms, toilets, basements and/or cellars used for storage or food preparation.
- Entrances, exits, loading/unloading areas and delivery docks.
- Complete finish schedules for each room including floors, walls, ceilings and coved juncture bases.
- Plumbing schedule including location of floor drains, floor sinks, water supply lines, overhead waste-water lines, hot water generating equipment with capacity and recovery rate, backflow prevention, and wastewater line connections.
- Location of lighting fixtures.
- Source of water and method of sewage disposal.
- A flow chart demonstrating flow patterns for:
    - Food (receiving, storage, preparation, service).
    - Utensils (clean, soiled, cleaning, storage); and
    - Refuse (service area, holding, storage, and disposal).
- Storage of employee personal items.
- Ventilation; including local exhaust ventilation
- Fire Protection; including fire-rated construction, fire/smoke dampers, fire suppression, fire detection and location and type of portable fire extinguishers.
- Elevations and clearance around serviceable equipment and systems for safe access evaluation.
- Seismic design including details for restraint of kitchen equipment.
- A hazard analysis and critical control points plan is required under specific circumstances (refer to Appendix A).

Menu Review and Food Flow

The menu review and the flow of food through the food establishment are integral parts of the plan review process. The menu or a listing of all the food and beverage items to be offered at the food establishment must be submitted as part of the plan review package to EH&S.

As with the inspection process, the plan review process should focus on the food and its flow through receipt, storage, preparation and service. The source and quantity of food to be served should be reviewed along with the preparation and post-preparation operations.

It is imperative to have knowledge of this information so that a proper assessment of the physical facilities can be made.

The food that flows through retail food establishment operations can be placed into the three following processes:

- **FOOD PROCESSES WITH NO COOK STEP**
    - *Receive – Store - Prepare – Hold – Serve*

      (Other processes may occur, but there is **NO cooking step**)

- Examples: Salads, deli meats, cheeses, sashimi, raw oysters

- **FOOD PREPARATION FOR SAME DAY SERVICE**
  - *Receive – Store - Prepare - Cook – Hold – Serve*

    (Other processes may occur, including thawing)
  - Examples: Hamburgers, fried chicken, hot dogs

- **COMPLEX PROCESSES**
  - *Receive – Store - Prepare – Cook – Cool – Reheat – Hot Hold – Serve*

    (Other processes may occur, but the key is repeated trips through the temperature danger zone)
  - Examples: Refried beans, leftovers

Knowledge of how the food is intended to flow through the food establishment is very useful since the critical control points for each process remain the same regardless of the individual menu ingredients.

- Special attention should be given to the review of complex food processes which involve:
- Multiple ingredients being assembled or mixed
- TSC foods
- Foods which will be prepared or held for several hours prior to service
- Foods requiring cooling and reheating
- Multiple step processing (passing through the Time Temperature Danger Zone, 135˚F - 41˚F more than once)

Layout, flow and menu

Strategic layout and placing of facilities and equipment will separate different food preparation processes, a major step towards preventing contamination of food that may result from poor personal hygiene, contaminated equipment, and improper holding temperatures. Adequate and convenient storage will also enhance operations.

The menu for a food establishment dictates the space and equipment requirements for the safe preparation and service of various food items. The menu will determine if the proposed receiving and delivery areas, storage area, preparation and handling areas, and thawing, cooking and reheating areas are available and adequate to handle the types and volumes of foods being prepared and served.

The menu is used to evaluate the flow patterns for the preparation of the food to be sure that the lay-out of the facility provides an adequate separation of raw ingredients from ready-to-eat foods,

and that the traffic patterns are not crossing paths with waste items and other sources of contamination. This will minimize cross contamination.

Food Preparation

1. Sinks

   Installation of sink locations (three-compartment sink, Handwashing sinks, Mop/Service floor sink, Food prep sink)) shall be in accordance with requirements of Washington State Department of Health WAC 246-215 Food Retail Code and any other pertinent section of the Food Code.

   The number of sinks shall be of a quantity and location to allow convenient use by employees in food preparation, food dispensing and warewashing areas.

   The number, placement of the sinks, equipped and maintained to support and behaviors that can prevent food employees from spreading foodborne pathogens.

   a. Handwashing sinks

      Handwashing sink must be easily cleanable, accessible always, fitted with stainless steel barriers on either side with rounded edges, of sufficient height to mitigate splash, with a low-profile faucet.

      Handwashing sinks must be equipped to provide potable water at a temperature of 100^{o} F through a mixing valve or combination faucet. If an automatic faucet, it must provide a flow of water for at least 15 seconds without the need to reactivate it.

      Hand washing sinks must be dedicated to hand washing only.

      Hand washing sinks shall be located so that they are within 25 feet of food preparation, food dispensing, and warewashing areas and in or immediately adjacent to toilet rooms.

      Side splash guards are required to be installed at hand sinks if they are installed next to food prep areas or equipment that may become contaminated by splashing during use of the sink

      Adequate hand washing facilities must be provided in all areas where food is handled by employees, as well as in all ware washing areas.

      Each handwashing sink must be sized to accommodate handwashing of both hands simultaneously and be provided with a supply of hand soap and single-use towels or other approved hand-drying device. An automatic handwashing facility must be used in accordance with manufacturer's instructions.

   b. Mop/Service Sink

      At least one service sink equipped with a floor drain must be provided and conveniently located for the cleaning of mops or similar wet floor cleaning tools and for the disposal of mop water and similar liquid waste.

      A mop sink and accompanying hook for storage of mops is required. Floor mounted janitorial sinks are preferable.

Sinks should be separated from food prep and storage areas by either distance or an enclosure.

c. Food Prep sink

A designated food preparation sink shall be provided in all food service establishments where food is prepared. This sink shall be labeled “For food preparation only-No ware washing-No hand washing.” No soap dispenser or paper towel dispenser shall be located at this sink.

2. Food Equipment

Food equipment should be certified or classified for sanitation by an American National Standards Institute (ANSI). Sufficient in number and capacity and properly designed, constructed, located, installed, operated, maintained, and cleaned. Spacing and elevation of equipment must conform to the food safety code to facilitate cleaning and maintenance.

a. Floor-Mounted Equipment

Equipment shall be mounted on ergonomic designed lockable casters, gliders or wheels to facilitate easy moving, cleaning, and flexibility of operation whenever possible.

Moveable equipment requiring utility services such as gas or electrical connections should be provided with easily accessible quick-disconnects or the utility service lines should be flexible and of sufficient length to permit moving the equipment for cleaning.

If a flexible utility line is used, a safety chain that is shorter than the utility line must be installed. Check with local fire safety and building codes to ensure that such installations are acceptable.

Provide seismic restraint for all equipment that weighs greater than 400 lbs. or is taller than five feet in accordance with the local building code.

Floor-mounted equipment that is not mounted on wheels or casters with the above utility connections should be:

i. Permanently sealed to the floor around the entire perimeter of the equipment. The sealing compound should be pliable and non-shrinking. It should retain its elasticity and provide a water- and vermin-tight joint; or
ii. Installed on a solid, smooth, non-absorbent masonry base. Masonry bases and curbs should have a minimum height of 2" and be coved at the junction of the platform and the floor with at least a 1/4" radius. The equipment should overhang the base by at least 1" but not more than 4". Spaces between the masonry base and the equipment must be sealed as above; or
iii. Elevated on legs to provide at least a 6" clearance between the floor and equipment. The legs shall contain no hollow open ends.
iv. For equipment not readily moveable by one person, spacing between and behind equipment must be sufficient to permit cleaning under and around the unit.

v. Equipment shall be spaced to allow access for cleaning along the sides, behind and above. At least 6" of clear, unobstructed space under each piece of equipment must be provided or equipment must be sealed to the floor.
vi. If equipment is against a wall and is not movable, the equipment must be joined to and/or sealed to the wall in a manner to prevent liquid waste, dust and debris from collecting between the wall and the equipment.
vii. When equipment is joined together, or spreader plates are used between equipment, the resultant joint must be sealed to prevent liquid waste, dust and debris from collecting between the equipment.

Unobstructed and functional aisle and working spaces must be provided. A minimum width of 36" is required by fire and building codes.

All utility and service lines and openings through the floor and walls must be adequately sealed. Penetrations through walls and floors must be minimized. Exposed vertical and horizontal pipes and lines must be kept to a minimum. The installation of exposed horizontal utility lines and pipes on the floor is prohibited. Any insulation materials used on utility pipes or lines in the FOOD preparation or dishwashing areas must be smooth, non-absorbent, and easy to clean. Electrical units which are installed in areas subject to splash from necessary cleaning operations or food preparation should be water-tight and washable.

b. Counter-Mounted Equipment

Equipment mounted on the counter is defined as equipment that is not portable and is designed to be mounted off the floor on a table, counter, or shelf. All counter mounted equipment shall be:

- Sealed to the table or counter; or
- Elevated on approved legs to provide at least a 4" clearance between the table or counter and the equipment to facilitate cleaning.
- Seismically restrained if required.

c. Other

Equipment that is open underneath, such as drain boards, dish tables, and other tables that are not moveable should be spaced to allow for ease of cleaning or should be sealed to the wall.

Non-food contact surfaces of equipment that are exposed to splash, spillage, or other food soiling or that require frequent cleaning shall be constructed of corrosion-resistant, non-absorbent, and smooth material.

Legs of all equipment should not have hollow, open ends.

If running water dipper wells are installed, methods for filling and draining the units must be identified.

3. Refrigeration and Hot Holding

Sufficient commercial refrigeration must be provided to store and maintain food below 41ºF. Quantity, type and location of these units will vary depending on menu, preparation methods and workflow. Commercial-grade freezers must be provided as necessary to store and maintain food below 0ºF.

If menu includes items that will be cooked or reheated and then held hot for service throughout the day, then adequate hot-holding equipment must be provided to maintain these food items above 135ºF.

4. Sneeze Guards/Food shields

Sneeze guards or other effective methods must be used to protect food from contact with diners and other sources of environmental contamination, in areas where food is prepared, served, or displayed.

Food shields are required whenever food or equipment may be subject to customer contamination.

The configuration of these shields can vary depending on the layout of the countertops/buffet areas and the location of the equipment and food that the shield is meant to protect.

5. Splash Guards

Splash guards should be installed at any sink that is adjacent to a food prep area or adjacent to equipment that may be subject to splashing from the sink.

6. Warewashing Facilities

a. Manual warewashing equipment

The minimum requirement for warewashing in a food establishment is a three-compartment sink with drain boards. Sink compartments shall be large enough to accommodate immersion of the largest equipment and utensils. If immersion in hot water is used for sanitizing in a manual operation, the temperature of the water must be maintained at 171°F (77°C) or above. A mechanical ware washing machine may be installed in addition to the three-compartment sink.

i. Mechanical Ware Washing Machines

Mechanical ware washing machines shall be installed in accordance with the manufacturer's recommendations and applicable code requirements. Only dishwashers that properly wash, rinse and sanitize dishes may be considered. Commercial dishwashers must meet all local codes for commercial use. Typically for commercial dishwashing equipment, the first consideration should be whether to choose a high

temperature machine, which sanitizes with the use of hot water for the wash and rinse cycles, versus a low temperature machine, which uses a chemical rinse to sanitize or kill pathogens on dishware and equipment. In either case, mechanical ware washing machines must display a manufacturer's data plate with operating specifications.

ii. High Temperature Machines

These machines use water whose temperature is boosted within the machine to a customary minimum temperature of 150 degrees Fahrenheit for the wash cycle, and 180 degrees Fahrenheit for the rinse cycle. This high temperature water exits the manifold at the specified temperature and may safely drop to 160 degrees Fahrenheit at the dish or utensil. These temperatures effectively render pathogens harmless, and the hot water and detergent do an excellent job of emulsifying grease.

Note: The absence of a sanitizer on the dishware and equipment makes this the preferred choice for some, especially those who do not want a chemical residue on dishes. Although a properly calibrated sanitizer in the final rinse of a low temperature machine is food safe, there are those (such as brewery personnel) who think that this sanitizer can leave a taste on glassware.

High temperature machines must be tested at regular intervals to make certain that the machine is reaching the proper rinse and wash temperatures, and this is accomplished by the use of a temperature sensitive, disposable thermometer that is sent through a dish cycle, turning color if the proper temperature is reached.

Alternatively, a maximum/minimum registering dishwasher thermometer can be sent through a cycle to register the highest temperature achieved.

Proper calibration of the exterior machine temperature gauges also provides a fairly accurate look at the wash and rinse temperature at every dish load if these gauges are calibrated.

Occasionally an establishment does not have water entering the machine at a high enough temperature to allow the booster to bring it up to the required levels. If this is the case, a dedicated hot water heater for the dishwasher can be provided. An exception to the 160-degree temperature requirement at the dish or plate is a stationary rack, single temperature machine that must reach 165 degrees Fahrenheit for the final rinse temperature. Always look at the machine's data plate to see the manufacturer's specification for proper operating temperatures.

iii. Low Temperature Sanitizing Machines

Low temperature machines operate with a wash and rinse temperature of approximately 120 degrees Fahrenheit, depending on the manufacturer's specifications on the data plate. This temperature, in conjunction with the detergent in the wash cycle and the sanitizer in the final rinse, is adequate to effectively render pathogens harmless. However, common experience suggests that dishes must be more effectively rinsed prior to dishwashing, to remove greasy food residues at the lower temperatures. If the recommended temperatures are not reached, it is also possible for food residues to

remain on the plate or utensil. The strength of the sanitizing solution must be carefully monitored, and a chlorine-based sanitizer is the usual type for these machines. A test strip must be dipped into the rinse residue on a dish after passing it through the machine, and this sanitizer must register the proper concentration. Newly installed low temperature machines are now required to have an audible or visible low-sanitizer level alarm. This requirement is interpreted differently by different jurisdictions and can be a sight-glass mounted in-line at the chlorine addition point, or an audible alarm set up at the dispenser, or a light alarm set up somewhere on or above the machine. These alarms must be monitored regularly by staff, as un-sanitized dishware can spread pathogens from one customer to another.

7. Ventilation Hoods

Ventilation hoods shall be installed whenever required by building, fire and mechanical codes and any other pertinent section of the Food Code, whenever necessary to remove heat, steam, vapors, smoke, obnoxious odors, or fumes. Per the food code requirements, such ventilation systems shall be designed and installed to prevent grease or condensation from collecting on walls and ceilings during cooking process, or from dripping onto other surfaces or equipment.

The design and construction of commercial kitchen hoods shall be in accordance with the local adopted edition of the mechanical code.

The plan should also include where will ventilation be provided and what type of ventilation (Type I and Type II) will be installed, the duct type and layout, exhaust fan and termination location and make-up air supply fan details.

Kitchen exhaust ventilation systems shall be independent of other exhaust systems and exhaust outside, include backdraft dampers and shall not include fire dampers as specified by the mechanical code.

Appliances interlocked with kitchen exhaust systems shall be in accordance with the mechanical code and the manufacturer’s requirements.

Vent less Hood Systems or ventilation systems integral to the cooking equipment need to be reviewed and approved by the local mechanical code, and other applicable fire safety codes.

Mechanical ventilation for the dining establishment shall be provided in accordance with the UWF Mechanical Standards and local building and mechanical codes.

Make-up shall be provided to ensure operational performance of local exhaust ventilation devices when on. In the event make-up air is lost or inadequate, the local exhaust ventilation devices shall shut-down or an alternate source of make-up air shall be provided.

8. Fire Protection

Commercial kitchen exhaust hood and duct systems required to have a Type I hood shall be protected by an automatic fire extinguisher system that is in accordance with the local fire code.

The type of automatic extinguishing system shall be a dry chemical system and shall be tested in accordance with UL300 and listed and labeled for specific use as protection for commercial cooking operations.

A manual activation device shall be located at or near a means of egress from the cooking area, not less than 10 feet and not more than 20 feet from the kitchen exhaust system.

All food establishments shall be provided with fire protection; suppression and alarm and detection in accordance with the EH&S fire protection standards and specifications.

9. Lighting

Protective Light Shielding such as plastic shields, plastic sleeves with end caps, shatterproof bulbs and/or other approved devices shall be provided for all artificial lighting fixtures located in areas where there is exposed food; clean equipment, utensils, and linens; or unwrapped single-service and single-use articles. Heat lamps shall be protected against breakage by a shield surrounding and extending beyond the bulb, leaving only the face of the bulb exposed.

Anticipated light intensity plan must be provided.

Minimum light intensity requirements must be met in all areas of Retail Food and Food Service Establishment defined in 06340 and lights must be properly shielded or shatter resistant

The light intensity must be:

- Intensity 10 Foot Candles, 30 inches above the floor:
  - Walk-ins, dry food storage, and other areas during cleaning
- Intensity 20-foot candles, 30 inches above the floor:
  - Consumer self-serve areas, inside equipment (e.g., reach-ins)
  - Handwashing, warewashing, equipment and utensil storage, toilet rooms
- Intensity 50-foot candles at a surface where:
  - Working with food, working with utensils or equipment, where employee safety is an issue when working with food or working with utensils or equipment such as knives, slicers, grinders, or saws where employee safety is a factor

10. Plumbing System

a. <u>Potable water systems</u>

Flow Prevention Devices & Air Gaps:

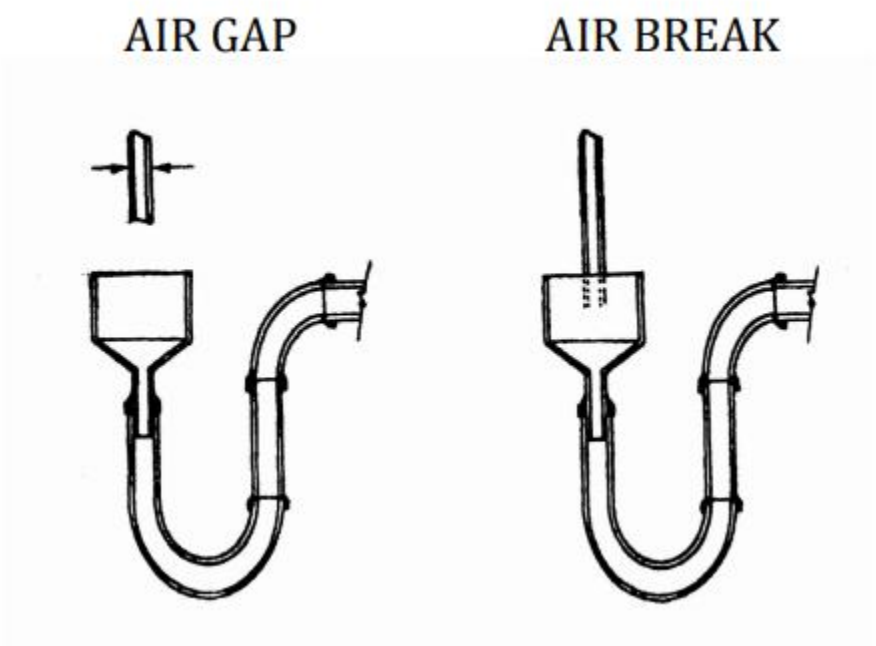
Back flow prevention devices and air gaps shall be provided wherever is required by the Food and mechanical codes.

An air gap between the drinking water supply inlet and the flood level rim of the plumbing fixtures or equipment, shall meet the definition of an approved air gap in WAC 246-290-010.

A connection to a sewer line may be direct or indirect. A direct connection may not exist between the sewerage system and any drains originating from equipment in which food, portable equipment, or utensils are placed, except if otherwise required by law.

When a warewashing machine is located within 5 feet of a trapped floor drain, the dishwasher waste outlet may be connected directly on the inlet side of a properly vented floor drain trap. An indirect connection may be one of two types, air gap or air break:

i. For a potable water supply, an air gap means the unobstructed, vertical air space that separates a potable system from a non-potable system.
ii. An air break is a waste line from a fixture that discharges used water or liquid waste to a drain where the waistline terminates below flood level. A connection of the air gap/air break to a sewer line may be direct or indirect. A direct connection may not exist between the sewerage system and any drains originating from equipment in which food, portable equipment, or utensils are placed, except if otherwise required by law. When a warewashing machine is located within five feet of a trapped floor drain, the dishwasher waste outlet may be connected directly on the inlet side of a properly vented floor drain.



A plumbing system must be installed to preclude backflow of a solid, liquid, or gas contaminant into the water supply system at each point of use at the food establishment, including on a hose bibb if a hose is attached or on a hose bibb if a hose is not attached and backflow prevention is required by law.

The backflow prevention device shall meet the standards for construction, installation, maintenance, inspection, and testing for that type of device in accordance with WAC 246-290-490 and 51-56-0600.

b. Hot Water Supply

The hot water supply shall be sufficient to satisfy peak hot water demands of the food establishment. Hot water for hand washing and most food establishment uses shall be at least 100°F.

c. Grease Trap

Seattle Municipal Code lists fats, oils, and grease (FOG) as a prohibited discharge. To minimize the amount of FOG entering the sewer system, commercial kitchens are required to install and maintain a grease interceptor. Implementing kitchen Best Management Practices (BMPs) reduces costly sewage backups or overflows into your business and the environment.

Grease trap must be installed according to law and should be easily accessible for cleaning.

11. Finishes

a. Floors

All flooring shall be in accordance with the UW Facilities Architectural Standard, FLOORING (C2030)

Example floor materials are as follows:

- Quarry tile, ceramic tile
- Sealed curbed concrete
- Seamless poured epoxy minimum 3/16-inch thick.
- Commercial-grade sheet vinyl (no felt backing)
- Commercial-grade vinyl composition tile (VCT)

Pre-approval from EH&S should be obtained prior to use of carpet and/or wood.

b. Walls

Wall finishes and supplemental finishing materials shall be in accordance with UW Facilities Architectural Standard, WALL FINISHES (C2010) and Wall Finish Supplementary Components (C2010.90), respectively.

Example wall materials are as follows:

- Stainless steel
- Ceramic tile
- Aluminum
- Fiber-glassed reinforced panels (FRP)
- Sealed Concrete blocks or bricks
- Epoxy or glazed drywall

c. Ceilings

Example ceiling materials may include wall finish material listed above along with the following:

- Easily cleanable, non-absorbent ceiling tiles
- Painted drywall

d. Coving

Coving is the floor material found at the base of walls (wall/floor junctures) and is required in most areas of the food establishment, such as:

- Food preparation, storage, handling, and packaging areas
- Utensil washing and storage areas
- Interior waste disposal areas (garbage, refuse, grease)
- Restrooms
- Hand washing areas
- Janitorial facilities
- Walk-in refrigerator and freezer units (inside and outside)
- Bars (employee side)
- Customer self-serve areas where non-individually prepackaged foods or beverages are sold or dispensed (e.g., salad bars, buffets, bulk food sales, beverage stations)
- Employee change and storage areas
- Wait stations

Coved flooring material should extend integrally up the walls. Integral coving is not required in areas used exclusively for dining, point-of-sale, or the storage of utensils or foods contained in the original un-opened container.

12. Dressing Areas & Lockers

Dressing areas and locker must be designated if employees routinely change their clothing in the establishment, and secure storage shall be provided for employee belongings as stated in the food code.

13. Storage Facilities

Food Storage area must be cleanable, dry location, where food is not exposed to splash, dust, or other contamination and at least 6" above the floor; protected from splash, dust, overhead plumbing, or other contamination.

The plan must specify the location and facilities used for storing all cleaned and sanitized utensils and equipment.

14. Toilet Facilities

Food establishment that has customer seating for on-premises consumption must have toilet rooms. Toilet rooms must be conveniently located within 200 feet of the food establishment and accessible to employees during all hours of operation. Toilet facilities must be properly supplied, self-closing doors, location and ventilation.

If the public toilet facilities are used by employees, separate toilet facilities may not have to be installed for the employees.

Toilet facilities must be made accessible in accordance with the Americans with Disabilities Act (ADA) of 1990.

The floors, walls, and ceiling in toilet rooms shall be smooth and easily cleanable.

The walls around toilets, urinals, toilet paper dispensers, soap dispensers, and paper towel dispensers should be water resistant and durable for frequent cleaning.

The minimum requirements for toilet facilities shall include:

- Toilet: At least one toilet and not fewer than the number of toilets required by law shall be provided. If authorized by law, urinals may be substituted for additional toilets in men's toilet rooms.
- Handwashing sink: Each handwashing sink shall be provided with hot and cold water tempered by means of a mixing valve or a combination faucet to provide water at a temperature of at least 100˚F. If used, self-closing, slow-closing or metering faucets shall be designed to provide a flow of water for at least 15 seconds without the need to reactivate the faucet.
- Handwashing cleanser: Each handwashing sink or group of two adjacent handwashing sink shall be provided with hand cleaning liquid, powder, foam or bar soap. A dispenser shall be provided for handwashing cleanser provided in liquid or powder form.
- Hand drying facility: Each handwashing sink or group of adjacent handwashing sinks shall be provided with individual, disposable towels; a continuous towel system that supplies the user with a clean towel; heated-air hand drying device; or hand drying device with air-knife, high velocity air at ambient temperatures.
- Toilet paper: A supply of toilet paper shall be provided in a dispenser at each toilet.
- Waste receptacle: If disposable towels are used, a waste receptacle shall be located at each sink or group of sinks. At least one covered waste receptacle shall be provided in toilet rooms used by females.
- Ventilation: Toilet rooms must be vented to the outside. Mechanical Ventilation shall be installed in toilet rooms according to the mechanical code.
- Toilet room doors: Toilet room doors shall be tight-fitting and self-closing.
- Lighting: At least 215 lux (20-foot candles) shall be provided in toilet rooms.

15. Storage of refuse, recyclables and returnables

Indoor areas:

Closely woven and easily cleanable carpet for carpeted areas; and

Nonabsorbent for areas subject to moisture such as food preparation areas, walk in refrigerators, areas, toilet rooms, mobile food unit servicing areas, and areas subject to flushing or spray cleaning methods.

Floor surfaces, except for anti-slip floor coverings, must be smooth and easily cleanable.

Outdoor areas:

Receptacles must be constructed of durable and cleanable materials.

Outdoor area shall be non-combustible and sloped to a drain.

16. Pest Control

Doors:

All openings to the outside shall be effectively protected against the entrance of insects and rodents. All roller doors, sliding or bi-fold doors, or similar movable wall systems that are not self-closing and create a continuous opening to the exterior must have an effective means of pest control.

Some examples of effective barriers include:

- Solid, tight fitting, self-closing doors.
- Fixed or self-closing screens of #16 mesh or finer.
- Effective air curtains.

Example Air Curtain

This may not apply if a food establishment opens into a larger completely enclosed structure such as a coliseum, arena, warehouse, shopping mall, superstores, airport, or office building, where the outer openings from the larger structure are protected against the entry of insects and rodents.

a. Building

All masonry or cement foundations must be rodent proof. Seal all openings into the foundation and exterior walls, including openings & penetrations around wall and ceiling penetrations.

Cover all building vents with a minimum #16 mesh screen. Effectively seal all air ducts, skylight, transoms, and other openings to the outside.

b. Windows

Windows that open to the outside must be properly protected with minimum #16 mesh screen, except for service windows.

17. Seismic Design

The seismic criteria for the project shall be provided.

All portable and fixed equipment that weigh more than 400 lbs. or are over five feet tall shall be provided with seismic restraint.

18. Access and Maintainability

All equipment and systems requiring service and maintenance shall be accessible in accordance with the UW EH&S Safe Access standard.

Commissioning and Pre-Inspection

Commissioning

Follow UW Commissioning Standards outlined in the UWF Mechanical and Fire Protection Standards.

Ensure the commissioning of all safety interlocks.

Potable water systems shall be installed in accordance with

Commissioning of potable water systems shall be in accordance with UWF Plumbing Standards and Specification 22 11 16 Domestic Water Piping and ASHRAE 188-2021 Section 8.4.

Specifically, if occupancy of the building is delayed more than two weeks but less than four weeks after disinfection, all fixtures must be flushed again.

If occupancy is delayed more than four weeks after disinfection, then disinfection and flushing shall be reviewed by EH&S to determine if disinfection and/or flushing is required.

All food establishment equipment shall be commissioned and shall meet all performance requirements outlined in this standard.

Pre-Inspection

A pre-operation food establishment inspection is required following commissioning of the food establishment. To prepare the facility for final inspection, here are few examples of checklist. If “no” is the answer to any of the below listed questions, the establishment is not fully prepared for the final EH&S inspection.

- Does hot water reach 100°F-120°F within 20 seconds at all handwashing sinks?
- Have you installed all automatic warewashing fixtures (glass washers, chemical sanitizing or hot water sanitizing dishwashers) and are they fully operational?

- Have you sealed the space between sinks (handwashing sink, prep sinks, three compartment sink) and the wall with caulking material?
- Have you installed all automatic warewashing fixtures (glass washers, chemical sanitizing or hot water sanitizing dishwashers) and are they fully operational?
- Have you installed soap and paper towel dispensers at all handwashing sinks and are they stocked with soap and single service disposable hand towels?
- Are all refrigeration units fully operational and measure 41°F or less? (Units must be functional at the time of inspection.)
- Have you installed finishes for walls, floors, ceilings, counters, shelving and equipment throughout the establishment that are smooth, non-absorbent, durable and easily cleanable?
- Have you obtained chemical test kits for sanitizing chemicals (both for the dishwasher and sanitizer) used in this facility?
- Have you obtained an accurate, numerically scaled (0°F to 220°F), metal stemmed, thin probed, food thermometer?
- Have you provided indirect drains (one inch air gap between end of drain line and floor sink or hub drain) for food preparation sinks, ice machines, condensate from refrigeration units and any unit used to dispense food or beverages?

References

Plan Review for Food Establishments 2016, Conference for Food Protection

http://www.foodprotect.org/guides-documents/plan-review-for-food-establishments-2016/

International building, fire, mechanical and plumbing code, local adopted editions

Appendix A

Hazard Analysis and Critical Control Points

Hazard Analysis and Critical Control Points (HACCP) plays a vital role in proper food establishment design. However, the risk management tool is not considered a “stand-alone” food safety system. Design and construction are essential pre-requisites and must be put in place prior to the implementation and operation of effective food production practices. The purpose of quality plan review is to ensure that food establishments are safe, sanitary, and efficient. Proper design, construction, and HACCP principles work to achieve these purposes and minimize the hazards.

Effective HACCP principles are essential to a successful food establishment and begin with the design and layout of the facility, monitoring the food flow throughout the establishment, from delivery, storage, preparation, cooking, service and consumption. A well-designed progressive

food flow system will minimize cross-contamination and maximize efficiency in an establishment.

Good manufacturing policies or practices, standard operating procedures (SOPs), and documentation are essential to an establishment's HACCP-based food safety program and control over potential hazards. HACCP policies specifically address requirements set out in the FDA Food Code. Additional standards or good retail practices are required as foundation for food safety and are detailed in the FDA Food Code. Examples include employee hygiene, employee restriction or exclusion, general sanitation, design, etc. HACCP/Variance under the Plan Review & Construction Program is responsible for the review of HACCP procedures and variance for establishments to conduct specialized operations.

The FDA Food Code requires an approved HACCP plan to be in place for some specialized processes not listed under §3-502.11. A formal HACCP PLAN review is required and needs to be approved prior to conducting these operations. For information on creating a HACCP PLAN, contact the local regulatory plan reviewer or visit the FDA guidance on food hazard analysis critical control point (HACCP) principles, application and guidelines.