

FOOD ESTABLISHMENT PLAN REVIEW GUIDE



**UTAH DEPARTMENT OF AGRICULTURE AND FOOD
DIVISION OF REGULATORY SERVICES
4315 South 2700 West, TSOB South Bldg., Floor 2
Taylorsville, UT 84129-2128**

STATEMENT OF PURPOSE

This document is intended to provide guidance and assistance for the design and construction of a food establishment. This summary is not an all-inclusive set of rules governing food safety requirements. All prospective, converted, or remodeled food establishments must complete and submit a plan review application at least thirty (30) calendar days prior to operating:

- Retail Food Regulatory Program (RFRP): prospective firms that prepare and/or sell food products directly to individual consumers must submit a Retail Food Establishment Plan Review Application (UDAF Form PR101).
- Manufactured Food Regulatory Program (MFRP): prospective firms that prepare and/or wholesale food products to separate entities must submit a Manufactured Food Establishment Plan Review Application (UDAF Form PR102).

The plans are reviewed to ensure that there are no apparent violations or deficiencies with current food safety rules and regulations. If no apparent violations or deficiencies are identified during the review, the plans are to be approved through a plan review letter with instructions for scheduling a pre-operational inspection; the pre-operational inspection is to be conducted at the

conclusion of the construction process to ensure that the establishment has been built, converted, and/or remodeled in accordance with the approved plans and specifications, or any approved modifications of those plans. The plan review process is to be completed within ten (10) working days after the plan submittal has been received, unless clarification is required. If significant violations or deficiencies are identified during the review or the application form is incomplete or lacks sufficient information to adequately demonstrate compliance with applicable rules, laws, and regulations, clarification may be required from the applicant before the plans can be further reviewed and approved. If clarification cannot be achieved, the plans shall be denied with a formal notice.

A business or firm seeking approval of the Utah Department of Agriculture and Food must provide evidence of at least one employee with supervisory or management responsibility that has successfully completed a food safety manager training program accreditation from the American National Standards Institute (ANSI) or from a program listed on the Conference for Food Protection (CFP) Accreditation Program Directory. *Exemptions of this requirement include: food establishments that offer only commercially prepackaged foods and beverages; food establishments that do not offer time and/or temperature control for safety foods or use them as ingredients; or food establishments otherwise determined by the Utah Department of Agriculture and Food to be exempt.* All food employees must be trained in the principles of food safety and hold a valid food handler permit issued by a local health department. Food safety manager certifications and food handler permits are effective for three years from the date the applicant receives documentation of a passing score from the testing organization.

The owner/operator is responsible for submitting all Hazard Analysis and Critical Control Point (HACCP) plans, variance requests, and written standard operating procedures before engaging in a specialized processing and/or packaging method.

Plan Review Exemption: A firm operating under a letter of authorization (LOA) at an establishment that has previously been approved by the Utah Department of Agriculture and Food, or if the Utah Department of Agriculture and Food determines that a review is unnecessary or unwarranted due to justifying circumstances, may be exempt from the requirements of a plan review. Nothing in this exemption relinquishes the authority of the Utah Department of Agriculture and Food to require a plan submittal to ensure compliance with Law.

DEISGN AND CONSTRUCTION

LIVING QUARTERS

No operation of a food establishment shall be conducted in any room used as living or sleeping quarters. All food processing and packaging areas shall have no doors, windows, or other entrances leading into living or sleeping quarters.

EQUIPMENT

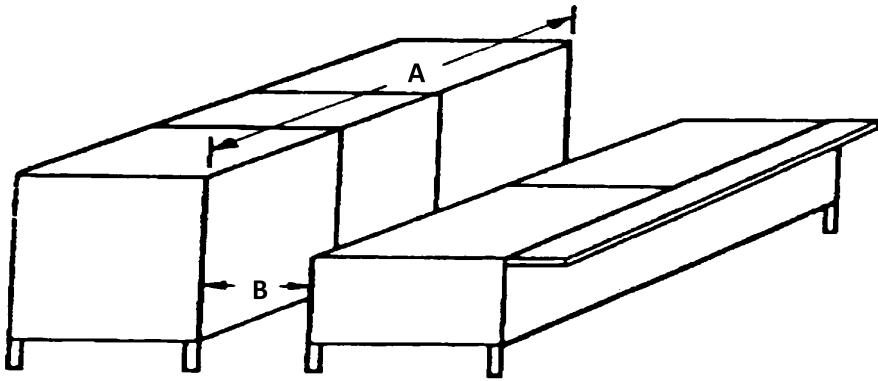
All food processing equipment must be commercial grade and must meet the standards of the American National Standards Institute (ANSI)/National Sanitation Foundation (NSF) of design, materials, and workmanship. Equipment and utensils must be designed to be smooth and easily cleanable; free of breaks, open seams, cracks, chips, inclusions, pits, and similar imperfections; free of sharp internal angles, corners, and crevices; and finished to have smooth welds and joints. Materials that are used in the construction of utensils and food-contact surfaces of equipment may not allow the migration of deleterious substances or impart colors, odors, or tastes to food. Equipment that is certified or classified for sanitation by an ANSI/NSF accredited certification program is deemed to comply with these provisions. Equipment should not be stored under exposed or unprotected sewer lines, open stairwells, or other sources of contamination. Equipment should be installed to provide a minimum thirty-six-inch aisle working space.

COUNTER-MOUNTED EQUIPMENT

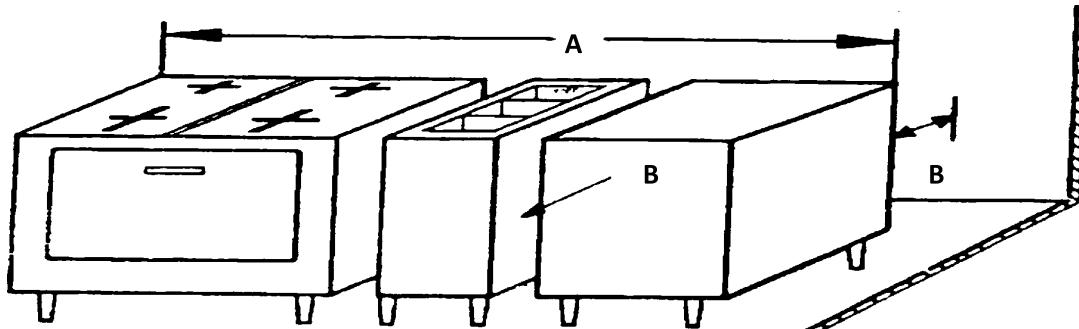
Counter-mounted equipment that is not easily movable must be elevated on legs that provide at least a four-inch clearance between the table and the equipment or be sealed to the table using silicone caulk; the clearance space between the table and counter-mounted equipment may be: three inches if the horizontal distance of the table top under the equipment is no more than twenty inches from the point of access for cleaning; or two inches if the horizontal distance of the table top under the equipment is no more than three inches from the point of access for cleaning. If multiple counter-mounted equipment is used, the equipment should be kept at least six inches apart to ensure access for cleaning, or should be sealed together.

FIXED EQUIPMENT

Fixed equipment should be installed with sufficient space between adjacent equipment, floors, walls, and ceilings to facilitate proper cleaning. Immovable equipment should be sealed to adjacent fixed-in-place equipment, floors, walls, or ceilings with silicone caulk. Floor-mounted equipment that is not easily movable or mounted on wheels/casters must have legs that provide at least six inches clearance from the floor. This clearance should be measured from the lowest obstruction under the piece of equipment. *Note: If a business card can be slid between the equipment and a wall or adjacent equipment, it must be sealed.*



Equipment sealed together



Equipment spaced apart

Recommended equipment spacing from walls, provided access is available from both ends:

Equipment Length (A)
4 feet or less
4 feet to 8 feet
8 feet or more

Space From Walls And Equipment (B)
6 inches
12 inches
18 inches

Note: For long banks of equipment, consider integrating moveable equipment on castors with stationary equipment on legs to facilitate cleaning and service access. A keeper chain should be installed with all flexible utility connection (i.e. flexible gas connectors).

If fixed equipment is installed on a raised floor platform, the platform should be a minimum of two inches high and be coved at the junction of the platform and the floor with at least a quarter inch radius. Equipment should overhang the base by one to four inches. Equipment must be sealed to the floor using silicone caulk.

CONDUIT/UTILITY LINES

All conduits and exposed utility lines (plumbing, gas, electrical, refrigeration, etc.) must be kept at least six inches off the floor and installed so as to not interfere with cleaning. Any insulation on utility lines must be smooth, non-absorbent, and easy to clean.

REFRIGERATION

Refrigeration equipment must meet NSF standards (Standard 7) or be of equivalent design, materials, and workmanship. If ice is to be used for temperature control, the ice-making unit must be designed and sized to meet the anticipated demand. All refrigeration equipment must have a numerically-scaled thermometer accurate to $\pm 3^{\circ}$ F; the sensing unit must be located to measure the air temperature in the warmest part of the unit. Refrigeration equipment, unless designed for such use, should not be located directly adjacent to cooking or other heat-producing equipment. Refrigeration equipment should not be installed outside of the building if unpackaged foods will be transported from the facility to the food establishment. When assessing the refrigeration needs, shelving space within the units should be designed to prevent cross-contamination and allergen cross-contact, and provide maximum air flow/circulation. Interior finishes of walk-in and reach-in refrigeration units should be certified or classified for sanitation by an ANSI accredited certification program. Galvanized metal is not recommended because of its tendency to rust.

A suggested formula to establish required refrigeration storage capacity is as follows:

$$\text{Total interior volume needed} = \frac{\text{volume per product (ft}^3\text{)} \times \text{number of products}}{.40 \times \text{height of unit}}$$

FOOD PROTECTION

Food must be protected from contamination by storing the food at least six inches above the floor in a clean, dry location, where it is not exposed to splash, dust, or other contamination. Food products may not be stored in locker rooms, toilet rooms, dressing rooms, mechanical rooms, under sewer lines that are not shielded to intercept potential drips, under leaking water lines, including leaking automatic fire sprinkler heads, under lines on which water has condensed, under open stairwells, or under other sources of contamination. Separate areas should be designed and operated to segregate food handling operations involving raw and finished food products.

BULK FOOD

Bulk food modules must be designed with tight-fitting, self-closing, individual covers and use an appropriate method for storing dispensing utensils. All bins must be easily cleanable and designed so that they can be removed individually for cleaning. Bulk bins are required to be labeled with the manufacturer's label that was provided with the food or a card, sign, or other method of notification that includes: the common name of the food, a list of ingredients in descending order of predominance by weight (if made from two or more ingredients), and nutrition labeling, unless exempted in the Federal Food, Drug, and Cosmetic Act Sec. 403(Q)(3)-(5).

FOOD GUARDS

Food or sneeze guards should be designed and installed to intercept a direct line between a customer's mouth and unpackaged foods on display. On the average, the vertical distance from the customer's mouth to the floor is 4 feet 6 inches to 5 feet. This average must be adjusted in special installations such as to accommodate the wheel chair bound and children in educational institutions.

WASTE LINES

Waste lines and roof drains should not be positioned directly above food preparation areas, food service areas, food storage areas, and warewashing areas; if waste lines or roof drains are positioned over these aforementioned areas, seamless gutters or other protective devices must be installed under the pipes to divert leakage away from the area.

HOT HOLDING/REHEATING EQUIPMENT (IF APPLICABLE)

Hot holding facilities must be adequate to maintain time/temperature control for safety (TCS) foods at an internal temperature of 135° F or above during hot holding periods. If TCS foods are reheated, the re-heating equipment must be capable of raising the internal temperature of TCS foods to at least 165° F within 2 hours. Steam tables, bain-maries, warmers, crock pots, and similar hot holding units are not effective for the rapid heating of TCS foods. Internal product thermometers accurate to $\pm 2^{\circ}$ F are required to monitor temperatures. *Note: Thermocouple thermometers are recommended due to increased accuracy and speed of reading, especially when dealing with thin foods and the monitoring of cooling temperatures.*

HANDWASHING

Handwashing facilities must be provided and located to allow convenient use by employees in food preparation, food dispensing, warewashing areas, and in, or immediately adjacent to, toilet facilities. Handwashing sinks must only be used for handwashing purposes and must be provided with an adequate handwashing cleanser and approved hand drying provisions. Handwashing sinks must be equipped to provide water at a temperature of at least 100° F through a mixing valve or combination faucet. Self-closing or metering faucets must be adjusted to remain on a minimum of 15 seconds without the need for reactivation. *Note: Hand sinks used by food employees should have knee, foot, infrared sensor, or wrist operated faucets.* The handwashing sink must be accessible at all times and should not be located where access may be easily blocked by waste containers, carts, etc. Sinks used for food preparation or equipment washing may not be used for handwashing. All plumbing fixtures must meet the requirements of the International Plumbing Code.

SPLASH SHIELDS

Splash protection is required when handwashing sinks are located within eighteen inches of food-contact surfaces, food storage areas, food preparation sinks, or warewashing sinks. Splash shields should be constructed of stainless steel or other durable water-resistant materials.

WAREWASHING

Adequate facilities must be provided to store dirty dishes and equipment prior to washing and sanitizing operations and separate facilities must be provided for the storage of cleaned and sanitized utensils and equipment, located at least six inches above the floor on fixed shelves or in enclosed cabinets, protected from splash, dust, or other sources of contamination.

MANUAL WAREWASHING

A three-compartment sink must meet NSF standards (Standard 2) and be provided for the manually washing, rinsing, and sanitizing of equipment. A three-compartment sink must discharge indirectly through an air gap or air break to the point of disposal, and be provided with dual (self-draining) drainboards, compartments large enough to accommodate the immersion of the largest piece of equipment being washed, and supplied with an adequate pressure of hot and cold water. *Note: Other sinks used for culinary purposes must also be indirectly drained.*

MECHANICAL WAREWASHING

Mechanical warewashing equipment must meet NSF standards (Standard 3) and be designed to handle the peak number and type of utensils and equipment being washed. Mechanical warewashing equipment that uses hot water to sanitize must reach a washing temperature of no less than: 165° F for a stationary rack, single temperature machine; 150° F for a stationary rack, dual temperature machine; 160° F for a single tank, conveyor, dual temperature machine; or 150° F for a multi-tank, conveyor, multi-temperature machine. Mechanical warewashing equipment that uses a chemical agent to sanitize must reach a washing temperature of no less than 120° F. Mechanical warewashing equipment that uses hot water to sanitize must achieve a utensil surface temperature of 160° F as measured by an irreversible registering temperature indicator. Chemical mechanical operations must use an approved antimicrobial solution with contact times consistent with those on the EPA-registered label use instructions. The waste line for all mechanical warewashing machines must not be directly connected to the sewer line; except that the waste line may be connected directly on the inlet side of a properly vented floor drain when the floor drain is within 5 feet of the warewashing machine and the drain line from the machine is properly trapped and vented.

HOT WATER REQUIREMENTS

The hot water supply must be sufficient to meet the continuous and peak hot water demands of the food establishment. Food establishments which do not contain critical plumbing fixtures (mechanical warewashing machine or other high hot-water demand equipment) may have a

water heater with a minimum of 50 gallons storage capacity and an input heating capacity of 50,000 BTU (gas) or 11 KW (electric).

The following formula may be used to determine the BTU or KW demand for the food establishment:

$$\text{Required BTU} = \frac{Q \times DR \times 8.33}{0.75}$$

$$\text{Required KW} = \frac{Q \times DR \times 8.33}{3412}$$

Q = Quantity of 140° F water from table

DR = Degree rise (needed temperature rise - 100° F)

8.33 = Weight of one gallon of water (pounds)

75% = Thermal efficiency of gas

3412 = Conversion factor for Kilowatts (KW)

FLOORS, WALLS, AND CEILINGS

Floors and floor coverings must be constructed of smooth, durable, easily cleanable, and nonabsorbent materials, such as sealed, poured, seamless concrete; terrazzo; quarry tile; ceramic tile; durable grades of vinyl composition tile (VCT); or tight-fitting wood impregnated with plastic. Carpeting is prohibited in preparation areas, warewashing areas, toilet rooms, refuse storage rooms, or other areas where the floor may be subject to moisture. In food establishments where water flush cleaning methods are used the floor must be graded to drains, and floor and wall junctures must be coved and sealed. For cleaning methods other than water flushing, the floor and wall junctures must be coved and closed to no larger than one-thirty-second inch.

Wall and ceiling surfaces must be constructed of smooth, durable, easily cleanable, and nonabsorbent materials, such as stainless steel; aluminum; ceramic tile; fiberglass reinforced panels (FRP); filled block and epoxy painted drywall; glazed block or brick; vinyl-wrapped acoustical ceiling tile (ACT); vinyl-roc; or epoxy painted ceiling drywall. Studs, joists, and rafters may not be exposed in food preparation areas, warewashing areas, toilet rooms, and vestibules. Utility service lines and pipes may not be unnecessarily exposed. Attachments to walls and ceilings in processing areas, such as light fixtures, vent covers, fans, etc., must be easily cleanable. Walls behind or adjacent to sinks, warewashing equipment, urinals, toilets, and drinking fountains must be covered with a durable waterproof material. Concrete block, if used, must be rendered non-porous and smooth by the application of approved block filler, followed by the application of epoxy-type paint. Protective corner guards are recommended in all high traffic areas. Alternate materials must be submitted to the Utah Department of Agriculture and Food for evaluation.

WATER SOURCE

Culinary water must be obtained from an approved source through the public water system or a non-public water system that is constructed, maintained, and operated according to law and approved by the Utah Department of Agriculture and Food. The pumping and storage capacities, as well as the frequency of testing of a non-municipal water supply must be specified.

CROSS-CONNECTIONS

Plumbing systems must be installed to preclude the backflow of solid, liquid, or gas contaminants from entering the water supply system at each point of use; no cross-connection may exist between the potable water supply and any non-potable water supply. Devices must be installed to protect against backflow and back-siphonage at all fixtures unless an air gap is provided. The air gap must be at least twice the diameter of the water supply inlet, but not less than one inch between the water supply and the plumbing fixture flood level rim. Water supplies to carbonators must be protected by a vented dual-check valve meeting the requirements of ASSE 1022.

SEWAGE DISPOSAL SYSTEM

Sewage must be conveyed to the point of disposal through an approved sanitary sewage system, including the use of sewage transport vehicles, waste retention tanks, pumps, pipes, hoses, and connections that are constructed, maintained, and operated according to law. Sewage must be disposed through a public sewage treatment plant or an individual sewage disposal system that is sized, constructed, maintained, and operated according to law.

GREASE TRAPS AND INTERCEPTORS

Grease traps and interceptors, where required, must be accessible for cleaning. Water from food waste grinders and water at a temperature above 140° F may not discharge into a grease trap.

Note: Contact your local sewer district for specific grease trap/interceptor requirements.

TOILET AND DRESSING ROOMS

At least one toilet room must be provided in the food establishment, and be provided an adequate number of toilets as required by law. The number of fixtures required is determined by the local building official based on the requirements of the Uniform Building Code, Appendix Chapter 29. Urinals may be substituted for toilets as specified in law. Toilet rooms must be conveniently located and accessible to employees at all times. Toilet rooms must be completely enclosed and provided with tight-fitting, self-closing doors. Toilet rooms must not open directly into a processing area; this requirement may be met by: installing two self-closing doors between the processing area and the toilet room or having the toilet room open into another area, such as a hallway or storage area, with a distance of at least 15 feet between the door of the toilet room and the processing area. If employees change clothes on site, a dressing room should be provided where they may change clothes and store personal possessions. This area may not be used for

storing and/or preparing food. If dressing rooms are not required, suitable facilities must be provided for storing employee personal belongings.

PEST CONTROL

Openings to the outside of the food establishment must be effectively protected against the entrance of pests by the installation of tight-fitting, self-closing doors; closed windows; screens; controlled air currents; vestibules; or other approved methods. Screening materials must not be less than sixteen mesh to the inch. Openings around pipes, conduits, or wiring entering the building must be adequately sealed. All foundations must be rodent proof. Loading docks and delivery doors must be provided with effective air curtains or vestibules with self-closing doors. *Note: It is recommended that outside lighting around loading areas and entrances be sodium vapor to decrease insect attraction.*

LIGHTING

An adequate light intensity must be provided of at least: 108 lux (10 foot candles) at a distance of thirty inches above the floor in walk-in refrigeration units and dry food storage areas and in other areas and rooms during periods of cleaning; 215 lux (20 foot candles) at a surface where food is provided for consumer self-service, such as buffets and salad bars or where fresh produce or packaged foods are sold or offered for consumption, inside equipment such as reach-in and under-counter refrigerators, and at a distance thirty inches above the floor in areas used for handwashing, warewashing, equipment and utensil storage, and in toilet rooms; 540 lux (50 foot candles) at a surface where an employee is working with food or working with utensils or equipment such as knives, slicers, grinders, or saws where employee safety is a factor.

Light bulbs shall be shielded, coated, or otherwise shatter-resistant in all food preparation, display, service, storage, and warewashing areas. Heat lamps should be protected against breakage by surrounding and extending a shield beyond the bulb, leaving only the face of the bulb exposed.

VENTILATION

All rooms, including toilet rooms, must be provided with sufficient ventilation to keep them free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke, and fumes. Ventilation systems must be installed and operated according to law. Local building/fire codes will regulate the necessity for ventilation and fire suppression systems. Type I Ventilation Hoods (with filters) must be installed at or above all commercial food heat processing appliances that produce grease, vapors, or smoke. Type I or Type II Ventilation Hoods (without filters) must be installed at or above all commercial food heat processing equipment that produces fumes, steam, odors, or heat. Hoods must be designed and installed in conformance with the National Fire Protection Association (NFPA) Bulletin 96. When vented to the outside, the ventilation system may not create an unsanitary, harmful, or unlawful discharge. Filters must be installed at an angle of not less than 45° from the horizontal. The inside edge of a canopy-type commercial cooking hood must overhang or extend a horizontal distance of no less than six inches beyond the edge of the

cooking surface. The vertical distance between the lip of the hood and the cooking surface must not exceed four feet.

WASTE HANDLING

Receptacles and waste handling units for refuse, recyclables, and returnables containing food residue must be durable, cleanable, insect and rodent resistant, leak-proof, and nonabsorbent. Refuse containers, dumpsters, and compactor systems used outside the food establishment must be designed and constructed to have tight-fitting lids, doors, or covers and must be stored on or above a smooth surface constructed of a nonabsorbent material such as four-inch sealed concrete. Inside garbage or refuse storage rooms must be constructed of easily cleanable, non-absorbent, and washable materials and must be insect and rodent proof. An adequate number of waste containers must be provided to accommodate the needs of the food establishment. Collection frequency must be sufficient to prevent the accumulation of refuse.

UTILITY/SERVICE SINK

At least one service sink or curbed cleaning facility with a floor drain must be provided and used for the cleaning of mops or similar wet floor cleaning tools, and be provided for the disposal of mop water or similar liquid waste. All threaded hose bibbs must be protected against backflow.

Note: Utility/service sinks should be conveniently placed on the same floor level within a reasonable distance of the area of use. Space must be allowed adjacent to the sink for the storage of mop buckets and other cleaning equipment and drying racks must be provided for mop heads. Chemical dispensers must be located in an area where it will not interfere with maintenance equipment.

LAUNDRY/LINEN STORAGE

Clean linens and aprons must be protected from contamination and stored away from soiled linens and aprons. If a laundry room is provided, it must be separate from food operations.

If you have any questions regarding this document or these requirements, please contact the Utah Department of Agriculture and Food, Division of Regulatory Services, at 801-982-2200.