

QUALITY ASSURANCE FOOD FACILITY DESIGN CHECKLIST

ALL EQUIPMENT, FACILITIES, ENVIRONMENTAL FEATURES MUST MEET FDA CODE REQUIREMENTS.

I. BUILDING EXTERIOR, ENVIRONMENT

A. SURROUNDINGS OF FACILITY

1. Adequate parking; handicapped parking
2. Adequate drainage
3. Adequate signage
4. Snow and ice removal in winter
5. Water from storms in summer (save for watering lawn)
6. Lighting for security
7. Main entrance
 - a. Legal handicap access
 - b. See-through entrance way for safety
 - c. Non-slip rugs
8. Delivery entrance
 - a. Door size minimum 40"x84" (h) or if pallet jacks used, double door 60"x84" (h)
 - b. Window for security
9. Hose bib for daily washing of area around facility and drain to collect all water
10. Insect and rodent control
 - a. Yellow lights inside doors
 - b. Blue lights outside at least 25 ft. from doors
 - c. Bug zappers
 - d. Openings to outside protected against entrance of insects and rodents (tight fitting, self-closing door, closed windows, screening not less than 16-mesh to the inch, controlled air currents, louvered vents that close when fan not in use, other means)
 - e. Provision to keep space within 50 ft. of building clean and free of litter

B. WASTE AND TRASH

1. Outside trash area
 - a. Attach to building and enclosed for safety
 - b. Refrigerated/insulated enclosure, 50°F
 - c. Sealed cement slab with trapped drain
 - d. Hose bib for daily washing of area (pressure cleaner/sanitizer) with backflow prevention
 - e. Grease trap, waste disposal, provision for waste pre-treatment to reduce Biological Oxygen Demand (BOD)
 - f. Recyclable (paper/glass/plastic/aluminum) storage
 - g. Can and bottle crusher
 - h. Adequate lighting; sodium vapor (minimum 100 foot-candles)
 - i. Insect traps and rodent control (yellow lights)
 - j. Enough garbage containers to hold all refuse, and frequent enough pick-up
 - k. Outside containers must have tightly closed lids or closings, be durable, easily cleanable, insect and rodent proof
 - l. All garbage containers placed on non-absorbent material
 - m. Incineration equipment, as allowed by law

C. WATER SUPPLY

1. Safe, adequate (private, municipal) water supply
2. Well or surface water supply system located, constructed according to local requirements

3. Submerged inlet line requires backflow preventer
4. Devices installed to protect against backflow and back-siphonage at all fixtures and equipment where an air gap at least twice the diameter of the water supply inlet but not less than 1" is not provided between the water supply inlet and the fixture's flood level rim (steam kettles, potato peelers, etc.). A hose must not be attached to a faucet unless a backflow prevention device is installed. Any threaded hose bib in a location where a hose is frequently attached requires a backflow preventer. Dema #152 not approved unless vacuum breaker is located upstream.
5. Possible exemption for itinerant and mobile foodservice operations regarding hot and cold water under pressure

D. SEWAGE SYSTEM

1. Approved public sewage system or approved private sewage disposal and treatment system
2. No direct connections between sewage system and drains originating from equipment in which food, portable equipment, or utensils are placed

II. BUILDING INTERIOR

A. GENERAL

1. Floors
 - a. Constructed of smooth, durable material [terrazzo, ceramic (toilets), quarry tile, commercial grade vinyl composition tile or sheet vinyl, approved poured floors]
 - b. Wooden, concrete floors not approved for food preparation and storage areas; existing, properly sealed concrete floors may remain until resurfacing is needed
 - c. Properly sealed concrete floors permitted only in basements used only for dry storage, storage of ice machines, etc.
 - d. Carpeting (closely woven, commercial quality) permitted in customer areas
 - e. Carpeting prohibited in food preparation, equipment/utensil washing areas, food storage areas toilet room areas containing urinals or toilet fixtures, behind bars
 - f. Sawdust, woodshaving, cardboard, peanut hulls, etc. prohibited in permanent facilities; "Peanut Bars" may use scattered hulls if swept up daily
 - g. Floors that are water-flushed for cleaning, receive water/fluid waste discharge from equipment, or where pressure spraying is used for equipment cleaning, must be graded to drain, have properly installed trapped floor drains; floor drain covers provided if the drain is not used
 - h. Duckboards and mats must be of non-absorbent, grease-resistant materials, easily cleanable (no wooden duckboards)
 - i. 4 ft. high or high sanitary base coving at floor wall junctures for food preparation and storage areas (some basements exempt)

- j. Exposed utility service lines, pipes at least 6" off of the floor along walls, etc.
2. Floor finish
 - a. Quarry tile (slip-resistant in aisles)
 - b. Quarry tile (standard finish under equipment)
 - c. Epoxy/latex grout
 - d. Slope 1/4" per foot to floor drains if kitchen is large; the distance (from a high point) to a drain shall always be less than 15 ft.
 3. Walls
 - a. Walls, non-supporting partitions, and wall coverings in food preparation, equipment washing, and toilet room areas must be light-colored, smooth, non-absorbent, easily cleanable; no exposed studs, joists [e.g., plaster-board properly taped, finished, painted with durable washable paint; concrete or pumice blocks filled, finished to orange peel surface; marlite in areas not subject or splash, moisture, physical abuse; ceramic tile; Fiberglass Reinforced Panel (splash zones); stainless steel behind cooking lines; no pegboard walls]
 4. Wall finish
 - a. Ground faced block (glazed cinderblock)
 - b. Fiberglass Reinforced Panel (F.R.P.)
 5. Ceilings
 - a. Ceilings in food preparation, equipment washing, and toilet room areas must be light-colored, smooth, non-absorbent, easily cleanable; no exposed rafters (see II.A.3.a for examples)
 - b. Fibrous-type ceiling panels must not be used in food preparation, equipment washing areas; must be non-absorbent, non-fissured, smooth, such as Fiberglass Reinforced Panel
 6. Ceiling finish
 - a. F.R.P. board with rust-resistant "T-bars"
 7. Lighting
 - a. Work surface illumination 80 to 100 foot-candles; minimum 10 foot-candles at floor level
 - b. 20 foot-candles (30" from floor) in equipment storage areas, in toilet/lavatory areas
 - c. 10 foot-candles at floor level in walk-in refrigerators, dry food storage areas, and during cleaning
 - d. Light shielded when over or within food storage, preparation, service and display, and equipment cleaning and storage areas
 8. Temperature management
 - a. Thermocouple meter provided for each cook, 1/16" diameter tip
 - b. Each refrigerator and hot holding device has calibrated thermometer with a scale for interior cabinet temperature
 9. Food contact surfaces
 - a. Safe materials; non-absorbent; smooth, easily cleanable, durable, corrosion resistant; stainless steel, wood, plastic
 - b. Cutting blocks, boards, salad bowls, baker's tables only of hardwood (maple) FDA-approved synthetic material
 - c. No laminated plastic counters as food contact/cutting surfaces
 - d. No plastic or galvanized bulk storage containers for hygroscopic bulk foods (non-toxic food grade materials only)
 - e. No wooden counters or shelves in food preparation areas
 10. Non-food contact surfaces
 - a. Safe materials; non-absorbent; smooth, easily cleanable, durable, corrosion resistant; metal, wood, plastic
 - b. Laminated plastics acceptable for foodservice counters, customers service counters, waitress stations, back bar storage, etc.
 11. Sanitation of stationery equipment
 - a. Non-portable equipment that is placed on a table or counter must be sealed to table or counter, or elevated on legs
 - b. Floor-mounted equipment sealed to the floor, installed on a raised platform of smooth masonry, meeting requirements of floor clearances, or elevated on legs with at least 4" to 6" clearance from floor
 - c. Unless sufficient space provided for easy cleaning surrounding equipment, the space between equipment and wall/ceiling must be 1/32" or less; if exposed to seepage, must be sealed to adjacent wall/ceiling
 12. Sanitation of movable equipment
 13. Utensils, containers, pans, cooking and storage equipment
 - a. Safe materials; non-absorbent; smooth, easily cleanable, durable, corrosion resistant
 - b. Refrigerators and freezers placed so as to not be overcrowded, thus disrupting circulation
 - c. Adequate equipment for catering operations to maintain required temperatures during transportation, storage, display, preparation, service
 - d. Equipment must disassemble easily, be accessible for cleaning
 14. First aid kit
 - a. Adequate for size of facility
 - b. Placed to prevent contamination of food, food contact surfaces; properly enclosed, wall-mounted first aid kit in food preparation areas acceptable
- B. KITCHEN CONSTRUCTION**
1. 10% of kitchen walls as windows
 2. Comfortable kitchen temperature (75°F/60% humidity)
 3. Insect and rodent control
 - a. Bug zappers
 - b. Air curtains
 4. Aisle space (minimum requirements) (42" minimum desired)
 - a. Employee uses one side of aisle -- 30"
 - b. Employee uses both sides of aisle -- 42"
 - c. Employee must pass behind workers on both sides -- 42" to 48"
 - d. Doors 36", 42", 48", or 60" double doors; all doors have windows and kick plates
 6. Hallway walls have rails and corner strips to prevent wall and corner damage
- C. UTILITIES/ENERGY MANAGEMENT**
1. General
 - a. Utilities up from basement or from walls, not from ceiling, or utility distribution system
 - b. Cogeneration system

- c. Waste heat recovery system
 - d. Boiler capacity (large enough to maintain proper temperatures)
 - e. Total energy management system (temperature monitoring) and equipment shedding to control peak demand
 - f. Security alarm system
 - g. Standby generator for refrigeration
2. Plumbing
 - a. According to local regulations, codes
 - b. Oversized drains, easy clean-out access
 - c. Copper pipes for water
 - d. Water chlorination/UV and filtration for incoming water if necessary
 - e. Water softener for water used for washing
 - f. Sump and pump for heavy rains
 3. Electrical
 - a. Location of electrical panels
 - b. U.L. certification on equipment

D. WASTE AND TRASH

1. Sufficient number of trash containers at all kitchen stations
2. Garbage, refuse kept in durable, easily cleanable, insect- and rodent-proof, leak-proof, non-absorbent containers
3. Plastic bags, wet-strength paper bags must line containers
4. Recyclable (paper/glass/plastic/aluminum) storage
5. Can and bottle crushers
6. Adequate lighting; sodium vapor (minimum 100 foot-candles 30" from the floor)
7. Insect and rodent control (yellow lights)
8. Can/cart wash area with power hose

E. LOADING DOCK

1. High for easy load/unload of trucks
2. Space for dunnage

F. UTILITY AND MOP ROOM

1. Utility (mop) sink with floor drain for cleaning mops, etc. and for disposing of liquid waste (mop water, liquid waste from iced chicken/fish shipments) to a sanitary sewer
2. Chemical storage cabinet (appropriate chemicals only)
 - a. Cabinet to be locked
 - b. Chemically resistant shelving
 - c. Adequate ventilation
 - d. Hazard control in case of fire
3. Adequate lighting (minimum 100 foot-candles 30" from the floor)
4. Power floor scrubber
5. Maintenance table (for tools, parts, etc.)
6. Vacuum cleaner/rug cleaner
7. Cardboard, other packaging material storage

G. LAUNDRY

1. Dirty linen storage, acceptable soiled linen container, away from food, clean equipment, clean linen
2. Clean linen storage, off of floor, above cleaning compounds on open shelving
3. Separate room with self-closing door or located in dry storage rooms containing only packaged foods or packaged single-service articles
4. Adequate for washing/drying linens, cloths, uniforms, aprons necessary to the operation only

H. EMPLOYEE FACILITIES (TOILET, ETC.)

1. Adequate, conveniently located, accessible toilet facilities; designed to code
 - a. Minimum 1 toilet with 1 adjacent hand washing sink); easily cleanable
 - b. Self closing doors
 - c. Single-use towel dispenser or mechanical hand drying device
 - d. Non-absorbent waste receptacle; if used by women, a covered waste receptacle
 - e. Toilet fixtures equipped with anti-siphon ball cock assembly; urinals with water inlet line below the overflow rim require a backflow preventer
 - f. Self-closing, slow-closing, or metering faucet designed to provide at least 15 seconds without reactivation
2. Area or room designated for routine change of clothes
3. Adequate, secure storage for employees' personal belongings (lockers)
4. Separate adjacent living facilities (if applicable) completely partitioned, solid, self-closing doors
5. Personal medications storage
6. Employee bulletin board

I. RECEIVING AREA

1. Security
2. Hand sink
3. Wall mounted receiving desk (receipts, labeling, computer, etc.)
4. Receiving scale
5. Sorting table (for separating spoiled/contaminated food)
6. Adequate lighting (minimum 100 foot-candles 30" from the floor)
7. Containers for boxes and trash
8. Space for return items
9. Possible exemption for itinerant and mobile foodservice operations regarding hot and cold water under pressure

J. DRY STORAGE AREA

1. Shelving
 - a. Solid shelving
 - b. Wire shelving
 - c. Casters
2. Chemical storage cabinet
 - a. Cabinet to be locked
 - b. Chemically resistant shelving
 - c. Adequate ventilation
3. Convenient outlet for vacuum cleaner if used
4. Storage for catering equipment
5. Area for equipment needing service
6. Laundry (washer/dryer) and laundry storage (see F) may be located in dry storage area

K. VENTILATION AND FIRE PROTECTION

1. EPA clean air compliance
2. Air volume calculated as _____
3. Electrostatic and carbon filters to control emissions
4. Easy grease clean-out for ducts
5. Hood construction simplified for cleaning and maintenance
6. Sprinkler system (water for fire suppression)
7. Stainless steel or tile on the wall behind the cooking line, the bottom of the hood to the cove base

8. Exhaust air system
9. Make-up air system
10. Air changes calculated with ventilator off

L. FREEZER STORAGE

1. Temperature of 0°F ±2°F
2. Defrost temperature rise less than 5°F; condensate line is heated and has an S trap to prevent humidity backflow from the outside
3. Floor construction
 - a. Frost break using 2" poly or redwood sleeper or
 - b. Tiled floor with 6" coved base
4. Walk-in freezer box/panel construction
 - a. Insulated screeds with floorless box
 - b. White interior panel finish
5. Minimum 10 foot-candles at floor level
6. Thermometer on all freezer units with alarms in case of freezer failure
7. Shelving
 - a. Coated with 12" spacing for pans
 - b. On casters for cleaning
8. Accurate thermometer in each freezer
9. Proper liquid waste drain from equipment to sanitary sewer drain

M. REFRIGERATION STORAGE

1. Larger coil to provide smaller temperature fluctuation less than 10°F temperature difference across the coil and 65% relative humidity inside the unit
 - a. Milk and dairy (35°F)
 - b. Fish (28°F)
 - c. Meat and poultry 28°F)
 - d. Fruits and vegetables (35°F)
 - e. Roots and tubers (40°F)
2. Walk-in cooler box/panel construction
 - a. Insulated screeds with floorless box
 - b. White interior panel finish
3. Minimum 10 foot-candles at floor level
4. Thermometer on all refrigerated units accurate to ±2°F showing warmest spot in the box, with alarms in case of refrigeration failure
5. Shelving
 - a. Stainless steel with <12" spacing for holding the many thin pans
 - b. On casters for cleaning
6. Rapid chill (where applicable)
 - a. Provide blower fans >1,000 ft./min. and racks in corner; pans have a minimum of 1" free air below bottom
 - b. Add second compressor for added BTUs if required [0.25 HP (2,000 BTUs) for each additional 20 lbs. of food to be cooled]
7. Accurate thermometer in each refrigerator
8. Proper liquid waste drain from equipment to sanitary sewer drain

N. FOOD PREPARATION

1. Design specifications
 - a. Prep sink by code (minimum 2-compartment) with adequate landing tables on each side
 - b. Work table(s) have a sink for cleaning/sanitizing the table
 - c. USDA/EPA/FDA-approved cleaners and sanitizers

- d. Food transport containers
- e. Lids or covering for finished product
- f. Utensils stored in a sanitary way
- g. Cutting boards (not larger than sink compartment); no pots and pans hanging up
- h. No drawers in work table(s)
2. Hand washing sink (See S)

O. COOKING AND HOT HOLDING

1. Design specifications
 - a. Equipment to be supported by:
 - 1) Cantilever off wall
 - 2) Base and sealed at least 4" high
 - 3) 6" legs or more
 - 4) Casters (if gas uses flex hose and quick disconnection)
 - b. Cord and plug sets for mobile cooking equipment with electrical cable restraints on all cables
 - c. Sink (1 compartment) in end of all cooking/prep tables to keep the table clean
 - d. Steam table with covers for wells (not dry heat)
 - e. Water for the cook to use to add to kettles/ranges/braising pans/steam table
 - f. Floor trough and grate in front of the kettle/braising pans, etc. to be used when cleaning
 - g. Movable shelving for pot and pan storage
 - h. Heated or chilled plate dispensers for food temperature maintenance
 - i. Hot holding boxes and bain maries with thermostats to maintain a temperature of 135°F to 200°F, ±5°F
 - j. Ice bank sink with vigorous agitation for rapid chill of food containers such as 10-gal. milk cans (less than 10" diameter) when necessary to bring product to proper temperature

P. REFRIGERATED DISPLAY (KITCHEN AND SERVICE LINE)

1. Recommended holding temperature of cold food to be 38°F or less for no more than 2 to 4 hours (depending upon type of food)
2. Use chilled plates for serving to help maintain temperature
3. Provide breath guards on all serving equipment
4. Accurate thermometer in each unit
5. Proper liquid waste drain from equipment to sanitary sewer drain

Q. BAKERY

1. Hand washing station
2. Easy access to pot and pan washing sink
3. Space for paper, coloring decorations, bulk flour, etc.
4. Refrigeration for fillings and icings
5. Water meter by mixing kettle and dough mixer
6. 2-compartment sink for cooking

R. POT AND PAN WASHING

1. 4-compartment sink by code (Wisconsin)
2. Scrap and wash compartments must pass through grease trap
3. Shelf for scrub brushes
4. 80 to 100 foot-candles 30" from floor
5. Sink compartment must be large enough to submerge more than 1/2 of largest pan
6. Drain boards: left-to-right dimension to be equal to or greater than the smallest dimension of sink bowl opening

7. Specify 3/4" inside diameter hot and cold water faucets for fast fill
8. Scrap sink compartment
 - a. Disposal for wastes
 - b. Pre-rinse spray with backflow prevention
9. Wash/soak sink compartment
 - a. Water agitation (power soak) for optimum washing
 - b. Water temperature to be minimum 120°F
10. Rinse compartment/sanitize compartment
 - a. Maintain water temperature of 120°F
11. Adequate landing area for clean pots/pans (use landing table or portable shelving)

S. DISH WASHING

1. Soiled dish table
 - a. Disposal, collector, scrapping system for waste
 - b. Pre-rinse spray with backflow prevention
 - c. Soak sink for flatware
2. Dish machine, properly installed
 - a. To achieve 180°F rinse temperature, provide booster heater with 70°F rise; incoming water temperature should be 120°F
 - b. Clean out dish machine daily
 - c. Wash all flatware twice -- first in flat rack, then sort and wash again
 - d. Final rinse water pressure 15 to 25 psi
 - e. Rinse water tanks protected with baffles, curtains, etc.
 - f. Adjacent area for pre-flushing and soaking
 - g. Dish racks
 - h. Automated chemical dispensers properly installed, alarm to signal low sanitizer level
 - i. Accurate thermometers to indicate wash and final rinse temperatures
 - j. Pressure gauge cock on final rinse water line
 - k. Pressure gauge for low-temperature machines
 - l. Dish washing machine may have a direct connection to plumbing drainage system only if a floor drain without a backwater valve is installed on the horizontal dishwasher branch line (check local codes); FDA standards require floor drain to be located within 5 ft. of dish washing machine; otherwise the dishwasher must discharge to the drainage system through an air gap
 - m. Chemical feeds on the water inlet line to dishwasher require vacuum breakers, located properly
 - n. Vacuum breaker often required where detergents are added to the water at the faucet head
3. Clean dish table
 - a. Adequate landing area to allow for racks to dry (typical rack size -- 2"x20")
4. Manual glass/dish washing
 - a. Sink with 3 or more compartments (4-compartment bar sinks)
 - b. 2 drain boards
 - c. Sink large enough to accommodate largest equipment/utensils
 - d. Dish baskets for manual hot water sanitizing
5. Spring-loaded spray rinse nozzle above sink rim

T. HAND WASHING AREA OR STATION

1. Large stainless/porcelain sink separate from utensil washing, easily accessible
2. Gooseneck electronic sink faucet

3. Hot water at 110°F to 120°F (2 gallons per minute)
4. Non-refillable dispenser for liquid soap
5. Paper towel dispenser
6. Nail brush
7. Proper hand washing signage
8. One day's reserve supply of soap and paper towels within 5 ft. of sink

U. BEVERAGE/SODA SYSTEM

1. Bag-in-box storage shelving (30", 42", 48")
2. Cylinder retainers for CO₂; secure pressurized tanks and cylinders
3. Backflow prevention
4. Water filter with easy access for cleaning
5. Secure storage for beer and liquor
6. Milk storage and dispensing system
7. Carbonated devices have a spring-loaded check valve to prevent carbonic acid from getting back upstream to any potentially toxic materials; 100 mesh screen and 10 micron plastic filter installed directly upstream from check valve

V. ICE MACHINE

1. Approved unit installed
2. Water filter with easy access for cleaning
3. Stainless steel scoop, scoop holster inside top of ice compartment
4. Proper liquid waste drain from equipment to sanitary sewer drain; ice bins not directly connected to sewer line

W. SERVICE STATION IN DINING AREA

1. Glass/cup storage
2. Ice/water dispenser
3. Condiments
4. Beverages; beverage line through ice of safe materials and grommets at entry and exit
5. Flatware storage