



FOOD SERVICE OPERATIONS

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★The criteria in this standard are the Air Force's minimum safety, fire prevention, and occupational health requirements. Major commands (MAJCOM), direct reporting units (DRU), or field operating agencies (FOA) may supplement this standard when additional or more stringent safety and health criteria are required. Refer to Air Force Instruction (AFI) 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, for instructions on processing supplements or variances. Report conflicts in guidance between this standard, federal standards, or other Air Force directives through MAJCOM, DRU, or FOA ground safety offices to Headquarters Air Force Safety Center, Ground Safety Division, Safety Engineering and Standards Branch (HQ AFSC/SEGS), 9700 G Avenue, SE, Suite 222D, Kirtland AFB NM 87117-5670.

This standard applies to food service operations including dining facilities, cafeterias, restaurants and snack bars, open messes, hospitals, and supporting activities. It covers Air Force food services and provides safety, fire prevention, and occupational health guidance for personnel working in these facilities. It implements applicable portions of several Occupational Safety and Health Administration (OSHA) standards and also covers material not addressed by the OSHA standards.

SUMMARY OF REVISIONS

Administrative changes have been made to update this standard to electronic format. Paragraphs have been renumbered as well as reference changes from Air Force Regulations (AFR) to Air Force Instructions (AFI) and updated AFOSH standard numbers, etc. A glossary of references, abbreviations, acronyms, and terms (attachment 1) is attached. Minor changes will be annotated by a ★.

1. Hazards and Human Factors:

1.1. Food services operations present a variety of hazards requiring care and action on the part of both the worker and the supervisor to prevent injuries. Floors must be frequently mopped and cleaned to promote sanitation. This creates slippery floors which may cause slips and falls. Spills of used grease or other liquids can create dangerous slippery floors and loading docks. Lifting and moving of heavy boxes and cases can result in sprains and strains.

1.2. The equipment used in kitchens is designed to heat, cut, mix, or grind food. Fats and oils can scald when hot and most are combustible. Electrically operated dishwashers present both electrical hazards as well as burn hazards from water temperature and from certain detergents used in the washing and rinsing cycles. Accumulation of grease in hoods and vents presents fire hazards. Broken glasses and dishes with sharp edges must be handled with extreme care to prevent cuts. Deployed, mobile, and emergency food service operations present increased danger of fires and burns from gasoline or other available fueled equipment.

1.3. Persons working in eating and drinking establishments can be exposed to several potential occupational health problems. The more common are:

- Drain cleaners may cause skin burns and damage to the eyes. Strong caustic solutions are often used for cleaning reusable filters for range, grill, and broiler exhaust hoods. Soaps and detergents may cause contact dermatitis (skin

rash). Throat irritation may occur from inhalation of soap dust. Carbon monoxide may be present where ovens and charcoal broilers are not properly ventilated. The base bioenvironmental engineers (BEE) evaluate the extent of these hazards.

- Microwave ovens are a standard appliance in most food service operations. As ovens get old, hinges and catches may loosen and microwave radiation may leak. Spilled food may prevent the oven doors from closing properly. If the interlock system fails, the unit may not shut off when the door is opened.
- Ultraviolet radiation can be harmful to the skin and eyes. Examples of low-intensity ultraviolet radiation sources are low-pressure mercury vapor lamps and black-light lamps.
- High heat levels can cause heat-related illnesses and employees will be made aware of the symptoms of heat disorders and the need for water and salt replacement.
- Noise that exceeds allowable limits can occur in some food services areas. The base BEE evaluates these suspected hazards.
- When a person's vision is subjected to extreme or inadequate illumination the worker can be affected in various ways--headaches, eye strain, impairment of vision--thus increasing accident potential.

2. General Requirements:

★2.1. Employee Training. Supervisors will provide non-supervisory personnel training to all newly assigned employees according to AFI 91-301. Training will be provided upon assignment and when there is a change in equipment, procedures, processes, or safety, fire prevention, and occupational health requirements. Supervisors will develop written outlines to use in employee training and will maintain documentation of this training. Special attention will be given to the following:

- All food services personnel shall receive training in proper lifting techniques (see paragraph 3.1.1).
- Personnel working in the kitchen and food preparation department shall receive training in the safe use of cutlery and food processing machinery, handling of hot foods, and the danger of falls (see figure 1).
- Each food handler will have a current health card in their possession.
- Additional training requirements are contained in specific sections of this standard.
- Supervisors will inform employees of hazardous chemicals used and will have material safety data sheets for those chemicals.

2.2. Housekeeping. Good housekeeping is very important in a food services operation. As a minimum the following requirements apply:

Figure 1. Wrong and Right Way to Fall.

There's a **WRONG** way
to Fall . . .



The wrong way is to follow your natural instincts as you fall. You tense up, resist, put out a straight arm to take up the shock. Do it this way and you're almost sure to get hurt.

And there's a **RIGHT** way
to Fall . .



The right way is the way athletes, acrobats, and paratroopers have been trained to fall. Don't resist. Instead, relax, go limp, and try to roll as you land, easing yourself down with bent arms.

2.2.1. All food services areas, to include kitchens, dining rooms, serving lines, passageways, storerooms, and disposal rooms shall be kept clean, orderly, and in a sanitary condition. Loading areas shall be kept clean, free of grease, and orderly to prevent congestion (see 29 CFR 1910, Subpart D, *Walking-Working Surfaces*, and 1910.141, *Sanitation*).

2.2.2. Microwave ovens shall be considered occupational use, and surveyed annually according to AFOSH Standard 161-9, *Exposure to Radiofrequency Radiation*. The base BEE will be contacted. Microwave ovens should be cleaned when spills occur; grease should not be allowed to accumulate.

2.2.3. Janitor/utility closets will not be used as trash collection points.

- 2.2.3.1. Dust mops, brooms, and wet mops shall be hung vertically on brackets or in storage racks with handles up, heads down.
- 2.2.3.2. Cleaning materials treated with chemicals may be subject to spontaneous combustion and shall be stored in closed metal containers, separate from other combustible items and all containers will be clearly marked to show contents. Supervisors will contact the base fire department for guidance.
- 2.2.4. Supplies used in building or equipment cleaning will be kept separate from food products. The preferred method is to store cleaning supplies in their own closets or lockers. Quantities of steel wool used for cleaning will be stored, in metal self-closing containers. Used steel wool will be disposed of in appropriate trash containers. Only noncombustible sweeping compounds and absorbents will be used. Used sweeping compounds or absorbents will be stored in a closed metal container.
- ★2.2.5. Cleaning fluids will be non-combustible and nontoxic. Guidance contained in AFOSH Standard 91-43, *Flammable and Combustible Liquids*, and local base fire regulations will be followed when storing flammables. Workers will read and adhere to labels on cleaning chemicals to prevent mixing of chemicals that may produce toxic gases.
- 2.2.6. Trash handling is an integral part of the housekeeping process. The proper disposal of combustible waste materials is important. Combustible waste products will be removed at the end of each shift or more frequently if necessary. Adequate trash bins, cans, baskets, and other appropriate containers shall be provided to encourage proper waste disposal. Broken glassware shall not be disposed of, or carried in, soft or easily pierced containers. If nonmetallic waste or trash cans are used, they shall be approved by the base fire department. Smoking materials will be disposed of separately from trash. (29 CFR 1910.141)
- 2.2.6.1. Clean and dirty rags will be kept in separate approved containers with metal lids. These containers will be stenciled to identify their contents. Lids will either be self-closing or provided with a solid tight fitting cover and kept closed on the dirty rag container. (29 CFR 1910.141)
- 2.2.6.2. Empty cartons and packing materials will be disposed of promptly. Carton banding will be disposed when removed. If cartons are nailed shut, the nails will be disposed of as the carton is opened.
- 2.2.6.3. When possible, outdoor trash receptacles will be located a minimum of 10 feet from any building and will always be kept closed or covered and the area around the receptacle kept clean.
- 2.2.7. When provided, clothing lockers will be ventilated, kept clean and orderly, with nothing stored on top or underneath them.
- 2.2.8. Break areas will be clean and orderly and will be provided with noncombustible trash cans with self-closing lids. (29 CFR 1910.141)
- 2.2.9. Matting or other movable floor coverings, used where foods are handled, will be disinfected as required by the base medical services.
- 2.2.10. Storage will not be permitted under stairways, under floors, or above ceiling levels of buildings, in any corridors or exit passageways, nor in mechanical and boiler rooms unless approved by the base fire department. Materials will not be piled against buildings or in front of doors and exits.
- 2.2.11. Areas behind freezer/refrigeration units, other electrically operated units, water heaters, or other energy producing devices will be free of combustible materials. These areas will be dusted regularly to prevent dirt/dust buildup.
- ★2.3. Walking, Working Surfaces, Aisles, and Passageways. AFOSH Standards 127-22, *Walking Surfaces, Guarding Floor and Wall Openings and Holes, Fixed Industrial Stairs, and Portable and Fixed Ladders* and 91-2, *Vehicle-Mounted Elevating and Rotating Work Platforms, Manually-Propelled and Self-Propelled Mobile Work Platforms, and Scaffolds (Towers)*, provide detailed information on this subject. Highlights of these standards (and references to OSHA standards) with emphasis on food services operations are included.
- 2.3.1. Layout. Proper layout, spacing, and arrangement of equipment, tables, passageways, aisleways, etc., are essential for orderly operations and to avoid congestion. Good layout can best be achieved in the planning stages, with recommendations from the safety office, fire department, BEE, environmental health services (EHS), and civil engineering. (29 CFR 1910, Subpart D)
- 2.3.2. Condition. Floors shall be kept in good condition and free of defects that can endanger workers (29 CFR 1910, Subpart D and 1910.141).
- 2.3.3. Floor Surfaces. Floor surfaces shall be kept clean and free of water and other slippery materials. When slippery substances are spilled, they shall be immediately cleaned or covered with a noncombustible absorbent material. Drip pans should be used wherever the possibility of spilling or dripping exists. Whenever floors are being cleaned or finishing compounds have just been applied, signs will be posted to warn patrons and employees of a slipping hazard. The size and placement of these signs will be at the discretion of the food services manager but shall be visible before a person enters the hazardous area. These caution signs will be yellow background with black letters.
- 2.3.4. Floor Sloping and Drains. When possible, drains will be provided when wet processes are used. Floors shall be sloped to allow liquids to naturally flow to the drains. Drains shall be kept clear to prevent clogging especially when hazardous or contaminated material is used. All new construction shall provide for drains in wet process areas. If drains are not available, the area will be immediately roped off, cleaned up, and dried before permitting other personnel to enter the area. Where wet

processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided. Where practicable, or appropriate, waterproof foot gear shall be provided. (29 CFR 1910, Subpart D and 1910.141)

2.3.5. Guards and Floor and Wall Openings:

★2.3.5.1. Every floor opening, such as a hatchway, chute, pit, trapdoor, manhole, or ladderway shall be guarded. The type of guard used is dependent on the location, reason for the opening, and frequency of use. One of the following guards shall be installed to protect personnel. (29 CFR 1910.23, *Guarding Floor and Wall Openings and Holes*, and AFOSH Standard 91-22)

2.3.5.1.1. Standard Railings and Toeboards. These railings and toeboards shall be permanently attached leaving only one exposed side. The exposed side will have a removable railing. When not in use, the railing will be left in place. (29 CFR 1910.23)

2.3.5.1.2. Floor Opening Cover. For less frequently used openings where traffic across the opening prevents the use of fixed railings, such as opening located in aisle spaces, a cover will be used. Cover strength specifications will have the same rated load capacity as the floor. Cover design, installation, and related hardware will not present a tripping hazard. The cover will be in place when the opening is not in use. The opening will be protected by removable railings leaving only one exposed side when the cover is open or removed. There shall be someone in constant attendance at the exposed side whenever the worker is not present. (29 CFR 1910.23)

2.3.5.2. Every stairway and ladderway shall be guarded by a standard railing and toeboard on all open sides, except at the entrance of the opening. If there is danger of a person walking straight into the opening, a swinging gate or offset passage shall be used. (29 CFR 1910.23)

2.3.6. Supervisors Will Ensure:

- Posters, bulletin boards, and other objects that could distract a person's attention are not placed in stairwells or rampways.
- Loose boards, insecure treads, protruding nails, and torn or worn stair treads are repaired or replaced immediately.
- Slippery or worn treads and surfaces are either replaced or made safe by coating them with nonslip surface materials.
- Stair nosings are securely fastened and rounded or beveled to prevent personnel from catching their heels on the treads.
- Railings and handrails are smooth, free of splinters or burrs, and securely mounted.
- Outside stairways, entrances, sidewalks, loading docks, and ramps are cleared of snow and ice and that abrasive materials, such as sand or ash, are readily available and used during inclement weather. This also includes all emergency exits and walks leading from them.
- Prior to opening of places of public assembly, all exits are checked for proper operations and exit discharges are clear of ice and snow.
- Vertical clearance above any stair tread to any overhead obstruction shall be at least 7 feet measured from the leading edge of the tread. (29 CFR 1910.24, *Fixed Industrial Stairs*)

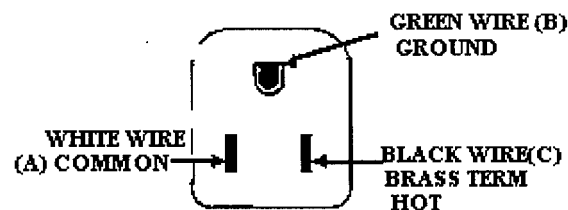
2.4. Electrical. There are many situations in food services operations where the potential for electrical shock exists (see 29 CFR 1910.305, *Wiring Methods, Components, and Equipment for General Use*, for additional guidance).

2.4.1. Installation/Repair. Only authorized, qualified electricians or appliance repairmen will install, service, or repair electrical equipment or wiring. Defective electrical equipment/cords will be taken out of service immediately.

2.4.2. Receptacles. Electrical receptacles and cover plates will be free of cracks and securely mounted. Multiple plug adapters will not be used because of the risk of overloading electrical circuits. Receptacles will be located out of the wet process and protected by a ground fault circuit interrupter (GFCI) when this cannot be accomplished.

2.4.3. Plugs. These devices will be of dead front construction (see figure 2).

Figure 2. Dead Front Construction Plug.



NOTE: PLUGS SHALL BE SOLID FACE "DEAD FRONT CONSTRUCTION" WITH NO INSULATING DISC PERMITTED. PLUGS SHALL BE OF THE NON-ARMORED TYPE AND EXPOSED METALLIC CABLE CLAMPS ARE NOT PERMITTED.

2.4.3.1. When in use, plugs will be inserted fully so no part of the prongs is exposed.

2.4.3.2. The third/grounding prong is a safety feature and needs to be checked frequently by supervisors for security, especially on items that are unplugged frequently. The prong will not be cut off nor will an adapter be used to allow a three-prong plug to fit a two-prong receptacle, since this negates the third wire grounding protection. This paragraph does not apply to double-insulated equipment or equipment such as clocks, radios, can openers, etc., which are not normally manufactured with a grounding plug.

2.4.3.3. Plugs, whether molded or clamped, shall be firmly attached to the cord to prevent pulling against wire connection points. Clamps will be nonmetallic.

2.4.4. Flexible Cords/Extension Cords. The National Electrical Code (NEC) is the source document for electrical installation and equipment. Electrical cords shall not be subjected to electrical currents or voltages greater than their rated capacity.

2.4.4.1. Cords will be inspected frequently by user's supervisors for signs of fraying, cracking, wear, or any damage that could be a sign of possible short-circuiting and ensuring cords are the proper size/rating for equipment it services. Defective cords will be taken out of service.

2.4.4.2. Cords shall not be:

- Hung over nails, rafters, or in a manner that constitutes a safety or fire hazard.
- Taped, stapled, or fastened to woodwork or walls.
- Routed through walls, ceilings, floors, doorways, windows, or similar openings.
- Attached to building surfaces or concealed in ceilings, walls, or floors.
- Placed under rugs, carpets, or other combustible materials.
- Walked on nor will equipment be allowed to run over them. If cords must be placed in travel lanes, they will be protected by molded housing or bridges.
- Kinked, stretched, or bent excessively. Practices of this nature will damage internal wire strands.
- Used in wet or damp locations.

2.4.4.3. Cords shall be continuous in length without splices. They shall be kept dry and free from oil or grease.

2.4.4.4. When possible, electrical power cords used with equipment will be suspended from overhead in rigid raceways.

2.4.4.5. When disconnecting cords, the plug will be pulled on rather than the cord to avoid damaging connections.

2.4.4.6. A grommet or some means of clamping approved by the NEC will be installed where cords pass through equipment housings, to prevent abrasion of the cord insulation. The means used will hold the cord firmly so there is no pull or strain put on the connecting point.

2.4.4.7. Extension cords have been responsible for numerous fires and their use will be held to an absolute minimum. They will not be used in lieu of permanent or fixed wiring. If used, they will have a single connection. Previously stated rules for cords also apply to extension cords.

2.4.4.8. Equipment connected by flexible cords will be disconnected when not in use for extended periods of time or at the end of the work shift.

2.4.4.9. Electrical wiring or conduits will not be used as hangers for clothing or supports of any nature.

2.4.5. Disconnecting Means. Circuit breakers, fuse boxes, and disconnect switches shall be legibly marked to indicate what they control, unless the purpose is evident.

2.4.5.1. Circuit breakers and disconnect switches shall clearly indicate whether they are in the open (off) or closed (on) position. (29 CFR 1910.304, *Wiring Design and Protection*)

2.4.5.2. Circuit breakers, disconnect switches, and fuses shall be readily accessible to each employee or authorized building management personnel. They may not be located where they will be exposed to physical damage nor in the vicinity of easily ignitable material. (29 CFR 1910.304)

2.4.5.3. Electrical controls shall not be blocked or otherwise obstructed.

2.4.5.4. Workers will not substitute larger fuses or breakers or use bypass wires.

2.4.5.5. Circuit breakers shall not be taped in the "on" position. Breakers that frequently trip are an indicator of possible electrical problems and shall be promptly reported and corrected.

2.4.6. Guarding of Live Parts. Electrical outlets, switches, junction boxes, etc., will have cover plates securely installed. Cover plates shall be free of cracks or other defects that could cause them to be ineffective. All unused openings (knock-out plugs) in switch housings, junction boxes, etc., shall be securely covered. Rigid conduits will be securely attached to the box and flexible conduits shall be firmly secured by a clamping device where the conduit enters the box. This will prevent abrasion to the conduit and will not allow a strain to be put on the connecting points.

2.4.7. Equipment Grounding:

2.4.7.1. Frames of electrical motors, regardless of voltage, shall be grounded. All covers will be securely fastened. Motor data plates will be legible and will not be painted over.

2.4.7.2. Exposed noncurrent-carrying metal parts of fixed equipment that may become energized under abnormal conditions shall be grounded.

2.4.7.3. Following is a list of cord and plug connected equipment, found in most food services operations (whether fixed, stationary, or portable) that shall be grounded, unless double insulated:

- Refrigerators/freezers.
- Refrigerated display cases.

- Dough breaks.
- Dishwashing machine.
- Clipper.
- Metal serving counters where electrical outlets and switches are attached.
- Deep fat fryers.
- Portable, hand-held, electric tools.
- Mixing machines.
- Food processing machines.
- Wet scrubbing/buffing machines.
- Water coolers and vending machines with refrigeration units.
- Cash registers.

2.4.8. Ground-Fault Circuit-Interrupters (GFCI). These devices safeguard personnel from current leakage to ground.

2.4.8.1. GFCIs are required as follows:

- Mandatory in all new food services facilities and those undergoing modification after the date of this publication in areas subject to washdown.
- Recommended for retrofit on all existing facilities.
- Most effective in areas where excessive water presents an electrical shock hazard.
- Mandatory in areas within 6 feet of sinks, basins, or other sources of water.
- Recommended--portable GFCIs which provide protection to the operator of equipment, such as power floor scrubbers or buffers when a non-GFCI circuit is used.
- Not needed for appliances such as freezers or refrigerators. These appliances should not be subject to power loss due to tripping caused by other appliances.

2.4.8.2. When GFCI for large areas is required, the GFCI breaker will be in the circuit panel.

★2.4.9. Weatherproof Electrical Systems. These will be installed where lampholders, fixtures, or receptacles are used in wet or damp locations, such as perishable storage areas (to include all refrigerated areas, both storage and food processing). Such fixtures near steam equipment will be of vaporproof construction to prevent electrical shock or short circuits caused by moisture. (29 CFR 1910.305 and AFOSH Standard 91-66, *General Industrial Operations*)

2.4.10. Undervoltage Protection. Machines which are not adequately safeguarded to protect the worker during undervoltage situations shall have an undervoltage protective device installed. Undervoltage situations occur when a machine automatically resumes motion after a low voltage situation or power interruption and the operator is exposed to hazardous moving parts. Base ground safety officials and shop supervisors will identify those machines which require this protection and assure that undervoltage protection devices are installed when needed. (29 CFR 1910.213, *Woodworking Machinery Requirements*)

2.4.10.1. Control switches (on and off) will be accessible to workers at their normal operating positions so they will not need to reach over moving parts of the machine to activate the switch. Control switch stop functions will be identified by the printed word "STOP" and (or) the color red. Positive pressure control switches will not be wedged for continuous operation. The motor "start" switch shall be protected against accidental/inadvertent operation.

2.4.10.2. A means shall be provided for making machines, including foot controls, inoperative before maintenance is performed or adjustments (or cleaning) are made to moving parts. One or more of the following means shall be used:

- The power cord will be unplugged when equipment is connected by plug and cord.
- The power source, circuit breaker, or start switch will be locked in the off position when equipment is wired to a direct power source.
- If existing equipment, circuit breakers, or power sources cannot be locked in the off position, danger signs or tags will be placed on the disconnecting means warning that maintenance is in progress and, that the disconnecting means is not to be turned on.
- When equipment is replaced or if a renovation project is planned, provisions shall be made to comply with the lockout requirements.
- New construction plans shall include provisions for complying with the lockout requirements.

2.5. Illumination. Quantities needed range from about 5-foot candles for most hallway lighting to 100-foot-candles or more for extremely fine or detailed work. The base BEE should be contacted if the level of illumination in an area is in question. Control of light is important to avoid glare and harsh shadows. Soft shadows are usually acceptable, but harsh shadows should be avoided since they may obscure hazards or interfere with visibility. Supplementary lighting or additional lighting will be provided in situations where general lighting is not sufficient.

2.6. Machinery and Equipment, Machine Guarding, and Power Transmissions

2.6.1. Operating Instructions (OIs). Supervisors will maintain manufacturer's manuals for all machinery or equipment under their control. In the absence of these, supervisors will develop local OIs, to include job safety, maintenance (including cleaning and sanitizing as required), lubrication, and inspection. Such instructions will identify operator and maintenance technician responsibilities. (29 CFR 1910.212, *General Requirements for all Machines*, and 1910.263, *Bakery Equipment*)

2.6.2. Training. Personnel will be trained, by the supervisor or a designated trainer, prior to operating machinery or equipment. Training will include proper operation, safety precautions, cleaning, hazard recognition, and emergency shutdown procedures for each piece of equipment they will use. Additionally, supervisors will inform operators of those repairs they are authorized to perform and will train them in proper maintenance procedures. Supervisors will maintain a current list of all personnel qualified to operate and maintain equipment. Supervisors will periodically evaluate employees operating machinery or equipment to ensure they are following proper and safe operating procedures.

2.6.3. Personal Protective Equipment (PPE). Specific requirements are addressed in paragraph 2.9.

2.6.4. Safe Operating Practices. Following are general safety precautions that apply to all equipment.

2.6.4.1. No attempt will be made to clean any part of a machine until all moving parts have come to a complete stop and the power source has been disconnected and marked with a warning sign (cord and plug equipment) or the power disconnecting switch turned off and locked out.

2.6.4.2. Loose fitting clothing, neckties, rings, bracelets, necklaces, or other apparel that may become entangled in moving machinery, power transmission apparatus, or moving parts will not be worn.

★2.6.4.3. Hair nets or caps will be worn to keep hair under control and safely away from moving machinery, power transmission apparatus, or moving parts (see AFOSH Standard 91-31, *Personal Protective Equipment*).

2.6.4.4. Machines will be used only for work within the rated capacity specified by the machine manufacturer.

2.6.4.5. Machines will be maintained so, while running, they are free of excessive or abnormal vibration.

2.6.4.6. Machines will be completely stopped and the power source disconnected before attempting to clear jammed work or debris.

2.6.4.7. Machines will never be left unattended with the control switch in the "ON" position. The operator will remain at the machine until all motion has ceased.

2.6.4.8. The electric equipment will be unplugged at the outlet or turned off at the circuit breaker/disconnected switch before washing the equipment or the surrounding area when water could splash on the equipment. Electrical components will be protected when there is danger of water or cleaning liquids entering them.

2.6.5. Machine Layout:

2.6.5.1. Machines that are subject to movement because of vibration, rotation, or other reasons shall be securely fastened to prevent their movement while operating. Exceptions to this are machines (for example, meat slicers) which have very little vibration or movement and can be satisfactorily held in position with rubber feet.

2.6.5.2. Sufficient space for material handling and maintenance will be provided around each machine. The local safety office and civil engineer should be contacted for assistance on layout problems.

2.6.6. Maintenance and Repair:

2.6.6.1. Supervisors will ensure that all machines are given a thorough inspection at least every 60 days unless the manufacturer's manual, use, or environment requires more frequent inspections.

2.6.6.2. Operators will inspect machines prior to the start of each shift, following a new setup, or when operators change to ensure that:

- Operating components are in good working order.
- Guards, interlocks, or other protective devices are securely mounted, operating properly, and in proper adjustment.

2.6.6.3. Records of supervisory inspections and any machine maintenance will be maintained.

★2.6.7. Guarding. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area of the machine from hazards such as those created by the point of operation, in-running nip points, rotating parts, flying chips, and power transmission apparatus (see AFOSH Standard 91-12, *Machinery*, for specific machine guarding requirements). Machines will not be operated unless all guards are securely in place and operational. Any time the guards are removed, the power cord will be disconnected or a disconnecting means will be turned off and locked out and tagged. (29 CFR 1910.212)

2.7. Fire Protection and Prevention

2.7.1. Food services personnel shall receive fire prevention training initially, and quarterly thereafter, from their supervisor as part of their orientation. Training shall include as a minimum:

2.7.1.1. How to report a fire by phone (for instance, phone number to call, building identification, what information to give the fire department, etc.). The building number and fire reporting number shall be affixed to each telephone instrument. The security police and ambulance service number shall also be shown.

2.7.1.2. Where fire alarms are located within the work area and how to activate them.

2.7.1.3. Where fire fighting equipment is located and how to operate it.

2.7.1.4. Where equipment circuit breakers and power disconnects that control their work areas are located.

2.7.1.5. Location of emergency exits.

2.7.1.6. Evacuation procedures for patrons and employees, to include assisting the physically handicapped.

2.7.1.7. Procedures for extinguishing a grease fire.

★2.7.2. Personnel working in facilities with dry chemical extinguishing systems shall receive semiannual training on the system from base fire protection personnel as required by AFOSH Standard 91-56, *Fire Protection*.

2.7.3. The base fire department will select, place, and maintain fire fighting equipment. Fire extinguishers will not be moved or relocated by other than fire department personnel. Supervisors, employees, and fire department personnel will ensure that fire extinguishers:

2.7.3.1. Are in their designated locations, charged, tested, sealed, and dated.

2.7.3.2. Have not been tampered with, actuated or discharged, and that there are no visible physical defects, corrosion, or other conditions that would affect their operation.

2.7.3.3. Are clearly visible, properly identified, and immediately accessible.

2.7.3.4. The following additional fire safety matters affect food services operations:

2.7.3.4.1. The careless handling and disposal of smoking materials is one of the leading causes for fires in the Air Force. The striking of matches, operation of mechanical lighters, or smoking are prohibited unless the areas or portion of the area have been approved by the base fire department and identified as a designated smoking area. Signs will be posted and smoking areas identified as required by the base fire chief, and when possible, red lines will be marked on the floor. Smoking materials will be placed in metal, self-closing receptacles (or nearest commercially available container) and stenciled "SMOKING MATERIALS ONLY."

2.7.3.4.2. Automatic timing devices will not be used to turn on electrical appliances unless personnel are present in the facility at the time the devices are in operation.

2.7.3.4.3. Space heaters will not be used without the approval of the base fire department.

2.7.3.4.4. Doors leading to passageways or providing access to rooms will not be blocked without prior approval of the base fire department. All such doors will be identified by signs with 4-inch block letters indicating "DOOR BLOCKED."

2.7.3.4.5. At least 3 feet of clear space will be maintained around self-closing fire doors.

2.7.3.4.6. Electrical fires are also among the leading fire causes in the Air Force. Items of concern are:

- Motor compressors not being properly maintained.
- Equipment misuse.
- Electrical equipment not operating properly. Primarily, equipment operating when the facility is closed (i.e., freezers and refrigerators).

★2.8. Exits and Exit Markings. AF 32-series, *Civil Engineering* guidance; National Fire Protection Association (NFPA) 80, *Exits*; NFPA 101, *Life Safety Code*; and 29 CFR 1910.37, *Means of Egress, General*, provide detailed information on this subject. Base civil engineers will comply with these publications.

★2.9. Personal Protective Equipment (PPE). Such equipment is not a substitute for administrative or engineering controls. While these controls are being implemented, or if it has been determined that control methods are not feasible, PPE shall be used as needed to protect personnel. This equipment includes respiratory and hearing protective devices, special clothing, and protective devices for the eyes, face, head, and extremities. All PPE shall be approved by the host base safety office and BEE for the work performed and shall be maintained in a sanitary and reliable condition. EHS is responsible for initial training and fit testing for users of respiratory protection. Supervisors shall instruct personnel in the use and care of this equipment. Training will be documented according to AFI 91-301. (See 29 CFR 1910.133, *Eye and Face Protection*, and AFOSH Standard 91-31)

2.9.1. Eye/face protection is required where there is a possibility of injury from caustic cleaning materials, flying particles, splatters, or chips.

2.9.2. Appropriate hearing protection shall be used where employees are exposed to noise levels in excess of 84 dBA. The BEE will be consulted for guidance.

★2.9.3. Some cleaning materials or operations may require the use of PPE. Equipment required could range from boots, aprons, and gloves to face shields or even respirators (see AFOSH Standard 91-31 and AFOSH Standard 48-1, *Respiratory Protection Program*). When sufficient guidance is not available, the base safety office or BEE should be contacted for guidance.

★2.9.4. Non-skid shoes shall be worn by personnel working in areas where floors may become wet or greasy. Safety-toe footwear shall be worn where there is a reasonable probability of foot or toe injury from impact and compression forces (see AFOSH Standard 91-31 and 29 CFR 1910.136, *Occupational Foot Protection*).

★2.9.5. Head protectors shall be used where hazards such as falling or flying objects, overhead obstructions, or a combination of these hazards exist or are likely to exist despite other control measures taken (see AFOSH Standard 91-31 and 29 CFR 1910.135, *Occupational Head Protection*).

★2.9.6. Protective cold weather clothing shall be provided for workers whose normal daily recurring duty requires them to frequently enter and exit refrigerators and freezers (see AFOSH Standard 91-31 and table 1 of this standard).

★2.9.7. Protective gloves shall be provided when employee's hands are exposed to rough, hot, cold, or sharp objects or when continual handling may produce blisters (see AFOSH Standard 91-31).

★2.9.8. Disposable respirators (face masks) may be needed by employees who are sensitive to dust (see AFOSH Standard 48-1). The base BEE will be consulted before respirators are used, to ensure protection afforded will be appropriate.

2.9.9. Ammonia solution is frequently used as a cleaning agent. Employees should avoid skin contact by wearing protective clothing such as rubber gloves. If skin or eye contact occurs, the affected area will be washed promptly. Ammonia gas is released from the solution and, therefore, good ventilation will be provided. For example, the hood should be operating when employees are cleaning grease from the range. Ammonia will NOT be mixed with bleach as this will produce the toxic gas, chlorine.

2.9.10. Table 1 lists frequently occurring food services operations where the use of PPE should be locally evaluated. The list is not all inclusive. Local food service managers may need to identify additional work situations.

Table 1. ★Personal Protective Equipment (PPE) for Food Services Operations. (AFOSH Standard 91-31 will be consulted for recommended types of PPE and additional guidance.)

Operations	Recommended PPE
Receiving and Loading Docks	General purpose leather gloves. Safety-toe shoes. Nonslip rubbers (if ice or wet walking surfaces are present).
Dry Storage	General purpose leather gloves. Safety-toe shoes.
Pot and Pan Area	Rubber gloves. Rubber apron. Rubber boots or rubbers over standard-issue shoes.
Walk-in Refrigerator and Freezers	Thermal gloves. Bump caps. Cold environment insulating clothing, four piece sets (hood, jacket, trouser, and safety-toe boot). Applies only to those workers whose normal daily recurring duty requires them to enter and exit these units frequently.
Food Preparation:	
# Meat Boning, Cutting, and Slicing	Metal mesh aprons or heavy butyl aprons. Safety-toe, slip-resistant shoes.
# Meat Grinding, Sawing, and Pressing	Metal mesh aprons or heavy duty butyl aprons. Safety-toe, slip-resistant shoes.
# Deep Fat Frying	Thermal gloves (wrist or elbow length). Thermal apron (optional).
# Baking	Thermal gloves (wrist or elbow length). Thermal apron (when removing items from oven).
Food Serving Area	Thermal gloves (wrist length). (Except when removing or installing pans from serving area). Thermal apron.
Dining Area	Rubber gloves (when removing dishes and cutlery).
Dishwashing Area	Rubber gloves. Rubber apron. Rubber boots with skid-resistant soles or equivalent. Above apply only in operations where the individual stays in the dishwashing area.
Food and Trash Disposal	General purpose leather gloves. Abrasion-resistant apron.

★2.10. Personal Hygiene and Sanitation. Selective guidance is included in AFI 48-116, *Food Safety Program*, and 29 CFR 1910.141.

3. Specific Applications:

3.1. Receiving/Loading Dock

3.1.1. Lifting Techniques (applies to all areas). Employees shall be instructed in proper handling techniques for the various size containers that are received. Supervisors should periodically evaluate and advise employees on proper lifting techniques. The base ground safety officer will be consulted in the planning stages of new facility design to minimize material handling.

3.1.1.1. Position Feet Correctly. Place feet shoulder width apart for balance, with one foot to the rear of the object and the other foot slightly ahead of the other and to the side of the object (see figure 3).

Figure 3. How to Lift Properly.



3.1.1.2. Crouch Close to the Load. Crouching is preferred to squatting. Stay close to the load to minimize strain on the back muscles (see figure 3).

3.1.1.3. Back Straight. Always keep the back as straight as possible. It may not be possible to keep the back in the vertical plane but avoid arching the back. Bend from the hips and not from the middle of the back (see figure 3).

3.1.1.4. Full Palm Grasp. Pick up materials with a full palm grip. Do not attempt to pick up weights with a fingertip grip. Ensure the load is free of grease or sharp points which could cause injury. Use suitable gloves when necessary.

3.1.1.5. Kinetic Leg Lift. With the arms, slide the object toward the body to give it some motion (kinetic energy). At the same time, lift the object with the legs and bring the back to a vertical position. Keep the object close to the body, avoid twisting while lifting.

3.1.1.6. Setting the Object Down. Use the same method as when lifting, but reverse it to set an object down. Lower the load by bending the legs and squatting with the back straight. Take care when releasing the load to prevent injury to fingers, hands, or feet.

3.1.1.7. Points to Remember:

- Use gloves to protect the hands and safety shoes to protect the feet.
- Inspect objects for slivers, sharp edges, rough surfaces, or slippery surfaces before attempting to lift.
- Keep fingers away from pinch and shear points.
- Do not carry a load that obstructs the view of the direction of travel. Make sure that the path of travel is clear.
- Do not turn at the waist to change direction or to put an object down. Turn the whole body and crouch down to lower the object.

3.1.1.8. Team-Lifting. Assign additional workers to assist when the load or material is too much for one person to handle safely and mechanical equipment is not practical for this purpose. Use workers of approximately the same size and train them in team-lifting. If one worker lifts too soon, shifts the load, or lowers improperly, either they or their partner may be overloaded and strained. Assign one person to give orders to ensure the necessary coordination.

3.1.1.9. Mechanical Material Handling Equipment. Use this equipment whenever loads are too heavy or bulky to be lifted or carried efficiently or safely by hand. Forklifts, hand trucks, rollers, conveyors, or cranes (when properly used) simplify materials handling and greatly reduce the hazards of handling supplies and equipment.

3.1.2. Trash:

3.1.2.1. Garbage cans should be covered securely when not being actually filled or emptied.

3.1.2.2. Trash and garbage cans will be leak-proof and adequate in number and size.

3.1.2.3. If the garbage disposal area is adjacent to or part of the general receiving area, there will be a program that keeps floors and (or) dock areas clear of refuse and waste.

3.1.2.4. Garbage containers will be positioned in a proper rack. Heavy garbage containers will be moved on dollies to eliminate as much lifting as possible.

3.1.2.5. Garbage cans shall be washed and sanitized weekly with hot soapy water.

- 3.1.3. Tools. Adequate tools will be available and properly stored for opening crates, containers, cartons, etc., (hammer, wire cutter, cardboard carton openers, and pliers).
- 3.1.4. Eave Spouting. There shall be adequate eave spouting over the receiving and dock areas to prevent excessive water build-up or run-off on the loading dock.
- 3.2. Dry Storage
 - 3.2.1. Shelves will be adequate to bear the weight of stored items.
 - 3.2.2. Employees shall be instructed to store heavy items on lower shelves and lighter items above. Bottom shelves must be at least 6 inches off the floor to allow for cleaning.
 - 3.2.3. A safe ladder will be provided for reaching high storage items.
 - 3.2.4. Cartons or other combustibles will be stored at least 18 inches from light bulbs and 36 inches from heads to fire suppression sprinkler systems.
- 3.3. Pot and Pan Area
 - 3.3.1. Approved rubber mats or other approved matting shall be used and shall be in safe condition.
 - 3.3.2. Employees shall be properly instructed in the use of correct amounts of detergent and other cleansing or sanitizing agents.
 - 3.3.3. A waterproof apron and rubber gloves will be provided for each employee.
 - 3.3.4. An adequate drainboard or other drying area will be provided so employees do not have to place pots and pans on the floor before or after washing.
 - 3.3.5. Drain plugs will be designed so pot and pan sinks can be drained without the employee having to place their hands in hot water.
- 3.4. Walk-in Refrigerators and Freezers
 - 3.4.1. Storage racks will be in safe condition, free from broken or bent shelves, and be supported on solid legs.
 - 3.4.2. Blower fans will be properly guarded.
 - 3.4.3. There will be a by-pass or other type device on the door to permit escape from inside if an employee is locked in. An internally activated alarm bell will be provided. The bell will be tested weekly to ensure it will work if needed. Whenever a door must be locked from the outside, i.e., with a hasp and padlock, a permanent sign will be mounted on the door exterior. The sign will state: "Determine No One Is Inside Before Locking Door," (or other appropriate wording) in at least 3-inch high letters. If a by-pass or other device is installed, the alarm system is redundant.
 - 3.4.4. Adequate aisle space shall be provided.
 - 3.4.5. Employees will be instructed on proper placement of hands when moving portable racks to avoid hand injuries.
 - 3.4.6. Heavy items will be stored on lower shelves and lighter items on higher shelves.
 - 3.4.7. Shelves will be adequately spaced to prevent pinched hands when moving large bulky items for storage.
 - 3.4.8. Protective clothing will be provided for persons who must continuously enter walk-in freezers (see table 1).
- 3.5. Food Preparation Area:
 - 3.5.1. All electrical equipment will be properly grounded.
 - 3.5.2. Electrical equipment will be inspected for safety defects at least once every year by a qualified electrician (base civil engineer military/civilian electricians and when appropriate, contract electricians).
 - 3.5.3. Electrical switches will be located so they can be reached easily in an emergency.
 - 3.5.4. Electrical switches will be located so employees do not have to touch metal equipment to reach them.
 - 3.5.5. Floors will be adequately maintained and cleaned.
 - 3.5.6. Employees will be instructed to pick or clean up all dropped or spilled items immediately.
 - 3.5.7. Employees will be instructed and annually evaluated in the proper and safe operation of all equipment.
 - ★3.5.8. Movable parts on equipment will be properly guarded to prevent contact with parts of the body. For example, a blade guard is needed on the meat slicer and wire mesh screening is needed over compressor units or over fans (see AFOSH Standard 91-12).
 - 3.5.9. Machine guards shall always be used by all employees whenever the machine is operated.
 - 3.5.10. A pusher shall be provided for use with meat grinding equipment and all employees shall be required to use it. Fingers or hands shall never be used to feed or clear meat grinders.
 - 3.5.11. All mixers shall be in safe operating condition.
 - 3.5.12. All equipment shall be turned off when not in use.
 - 3.5.13. Knives and other cutting attachments shall be properly safeguarded and stored in safe enclosures when not in use.
 - 3.5.14. The hood and ducting will be free of grease accumulation. Hood filters over grease vapor producing activities, (for example, deep fat fryer and grill) will be washed after each use/meal period. Hood-filters in other areas should be washed once per week. Ducting will be cleaned when necessary but at least once every 6 months. The cleaning of filters and ducts will be documented on a general purpose form. Cooking shall not be permitted under hoods that do not have filters installed (properly)

or when the fire extinguishing system is not operating. Deep fat fryer thermostats will be calibrated every 12 months (document).

3.5.15. The fire extinguisher cover for the deep fat fryer shall be easily accessible. The lid will fit snugly over the deep fat fryer with frying baskets raised or lowered.

3.5.16. Exhaust fans shall be operating at all times when cooking equipment is in operation.

3.6. Serving Area

3.6.1. Hot food tables shall be cleaned after each meal.

3.6.2. Safety valves on equipment shall be functional and periodically tested.

3.6.3. Serving counters and tables shall be free of broken parts and wooden or metal splinters and burrs.

3.6.4. There shall be a semi-annual inspection of serviceware to discard cracked and heavily scored items.

3.6.5. All uncovered food shall be removed and discarded if it was adjacent to any breakage or spillage and contamination was even remotely possible.

3.6.6. Tray rails shall be adequate and designed to prevent trays from falling off while patrons are moving through the serving line.

3.6.7. Floors and (or) ramps shall be dry and free of splinters, protruding nails, loose boards, or unnecessary holes and otherwise in safe condition.

3.6.8. Floors shall be mopped as necessary or at the end of each meal period and waxed with nonskid wax as needed. Caution signs shall be used when floors are wet to indicate a possible hazard.

3.6.9. Traffic flow shall be arranged so the danger of customers colliding while carrying trays or obtaining food is minimized.

3.7. Dining Area:

3.7.1. Pictures shall be securely fastened to walls.

3.7.2. Drapes, blinds, or curtains shall be securely fastened and constructed of fire-resistant materials.

3.7.3. Chairs shall be free from splinters, metal burrs, and broken or loose parts.

3.7.4. Floors shall be continually inspected for spillage and other hazardous situations and cleaned immediately to prevent slipping hazards. Special attention should be given to the floor adjacent to water, ice cream and milk stations, and salad bars.

3.7.5. Food dispensers shall be properly grounded.

3.7.6. If trays with used dishes are placed on conveyor units, the edges shall be guarded to keep customers or employees from catching fingers or clothing.

3.7.7. If dishes are removed on portable racks or bus trucks, these units shall be in safe operating condition with all wheels or casters working and all shelves firmly fastened.

3.7.8. Decorations shall be of a flameproof or noncombustible material.

3.8. Dishwashing Area

3.8.1. Floors shall be reasonably free of excessive water buildup and spillage.

3.8.2. Supplemental flooring shall be properly maintained in safe condition before being used.

3.8.3. All electrical units shall be properly grounded.

3.8.4. Switches shall be readily accessible and located to permit rapid shutdown in an emergency.

3.8.5. Employees shall be able to reach switches without touching metal units such as tables and counters.

3.8.6. Employees shall be instructed in the use of detergents to prevent skin and eye irritation.

3.8.7. A program for the safe collection and disposal of broken glass shall be developed by supervisors and used by all employees.

3.8.8. If a dishwashing machine is used, the take-off counter shall be designed to prevent fingers or hands from being caught and injured.

3.8.9. Where controls are in a passageway, they shall be recessed or guarded to prevent breakage or accidental starting.

3.8.10. Dish racks shall be in safe condition (if metal or plastic, free of sharp corners that would cause cuts) and kept off the floor to prevent tripping.

3.8.11. Entry and exit curtains for dishwashing machine (chipper) will be in suitable condition to prevent hot water from spraying outside the machine.

3.9. Bakery Area:

3.9.1. Any machine using electric current shall have its frame and electrical components grounded.

3.9.2. All gears will be enclosed and (or) protected by adequate guards.

3.9.3. Sprockets and V-belt drives within reach from passageways and platforms, or less than 7 feet from the floor, will be enclosed.

3.9.4. All rotating parts will be smooth. For example, lubrication fittings or any other members which are not flush with the rotating part, must be recessed.

3.9.5. Screw conveyors will be covered. Dead end screw conveyors will be provided with an overflow safety gate which operates an electrical limit switch.

- 3.9.6. Manually fed dough breaks shall have top roller protection. An emergency stop bar shall be provided and located so the body will press against it if the operator slips and falls toward the rollers or if the operator's hand gets caught in the rollers. The emergency stop bar shall be checked daily for proper operation.
- 3.9.7. Molder feeding devices shall be designed so the operator's hands cannot be placed into in-running rollers. The molders shall be equipped with stopping devices within reach of the feeder and another one next to the employee taking the dough away.
- 3.9.8. All slicers shall be provided with a mechanical device to push the last loaf through the slicer.
- 3.9.9. When doughnut machines are used, separate flues shall be provided for venting vapors from the frying section and for venting products of combustion from the heating exchanger used to heat the fat. Doughnut fryers shall be installed and used under an approved type hood with an installed fire extinguishing system only. This includes portable type equipment.
- 3.9.10. Horizontal mixers with either power or manual dumping arrangements shall be equipped with safety devices which engage both hands of the operator while the agitator is in motion under power and when the bowl is open more than one-fifth its total opening. Vertical mixers shall have devices available for moving bowls weighing 60 lbs. or more with contents, into and out of the mixing position of the machine.
- 3.9.11. All dump bins shall be of a suitable height from the floor to enable the operator to dump flour from bags without undue strain or fatigue. Where the edge of any bin is more than 24 inches above the floor, a bag rest step shall be provided and used. Openings shall be protected by means of bars or grids. If grids are made of mesh, the openings will not be larger than 3 inches in length or width. A control device for stopping the dump bin and blender will be close to the normal location of the operator.

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★GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

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AF 32-series instructions, *Civil Engineering*.

Air Force Occupational Safety and Health (AFOSH) Standard 48-1, *Respiratory Protection Program*.

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AFOSH Standard 91-12, *Machinery* (formerly designated AFOSH Standard 127-12).

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OSHA 29 CFR 1910.23, *Guarding Floor and Wall Openings and Holes*.

OSHA 29 CFR 1910.24, *Fixed Industrial Stairs*.

OSHA 29 CFR 1910.37, *Means of Egress, General*.

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OSHA 29 CFR 1910.135, *Occupational Head Protection*.

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OSHA 29 CFR 1910.212, *General Requirements for all Machines*.

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OSHA 29 CFR 1910.304, *Wiring Design and Protection*.

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NFPA 101, *Life Safety Code*.

Abbreviations and Acronyms

AFI—Air Force Instruction (new designation)

AFOSH—Air Force Occupational Safety and Health (AFOSH)

AFR—Air Force Regulation (obsolete designation)

AFSC—Air Force Safety Center

BEE—Bioenvironmental Engineers

C—Celsius

CFR—Code of Federal Regulations

DRU—Direct Reporting Unit

EHS—Environmental Health Services

F—Fahrenheit

FOA—Field Operating Agency

GFCI—Ground Fault Circuit Interrupter

MAJCOM—Major Command

NEC—National Electrical Code

NFPA—National Fire Protection Association

OI—Operating Instructions

OSHA—Occupational Safety and Health Administration

PDO—Publishing Distribution Office

PPE—Personal Protective Equipment

WWW—World-Wide Web

Terms and Definitions

Aisleway—An established path for powered material handling equipment used inside a facility, such as in a warehouse.

Combustible Liquid—A liquid with a flashpoint at or above 100 degrees Fahrenheit (F) (37.8 degrees Celsius (C)).

Conveyor—A device for moving or transporting bulk materials, packages, or objects in a predetermined direction. Conveyors may be power operated or gravity operated and are configured to meet specific needs.

Dead Front Construction Plug—Attachment plug and connector constructed so there are no current-carrying parts except the prongs, blades, or pins exposed. Exposed metal is prohibited.

Deep Fat Fryer—A tank utilizing boiling fat to fry or cook foods.

Dishwasher—A mechanical device for washing and rinsing dishes by spraying hot detergent-laden water across their surfaces.

Double Insulated—Isolation of the electrically energized portions of a motor from the outer case. This is accomplished either by using a double layer of internal insulation or by making the outer case of high impact plastic rather than metal. Double insulated equipment does not require a third wire ground.

Dough Break—A machine designed to process dough by passing it through rollers or agitators.

Flammable Liquid—A liquid with a flashpoint below 100 degrees F (37.8 degrees C).

Ground Fault Circuit Interrupter (GFCI)—A fast-acting circuit-breaker activated by a balancing transformer that is sensitive to differences between the flow of current to an electrical device and the return flow; should that current be bled off by a ground fault (short circuit), the GFCI will detect the imbalance within milliseconds and open the circuit before a serious shock can occur to personnel.

Grounding—A procedure for providing an electrical path to ground (or earth).

Hazardous Chemicals/Materials—Those products whose chemical or physical properties require that additional care and control be exercised in their storage, handling, and use.

May—Indicates an acceptable or satisfactory method of accomplishment.

Microwave Oven—A heating device, usually portable, used to heat food with microwave radiation.

Mixer—A machine using vertically mounted rotating paddles or blades to mix food products.

Passageways/Walkways—A path for pedestrian and nonpowered material handling equipment. For the purposes of this standard, passageway is used for interior and walkway is used for exterior paths.

Public Assembly—Eating or drinking establishment accommodating 50 or more occupants.

Screw Conveyor—A machine using a spiral feeding device to move food products.

Shall—Indicates a mandatory requirement.

Should—Indicates a preferred method of accomplishment.

Walking and Working Surfaces—Floors, aisles, corridors, platforms, and ramps where employees walk or work.

Will—Is also used to indicate a mandatory requirement and in addition is used to express a declaration of intent, probability, or determination.

FOOD SERVICE OPERATIONS CHECKLIST

1. Are employees working in kitchen and food preparation areas trained (and their performance periodically evaluated) in proper lifting, safe use of cutlery and food processing machinery, handling of hot foods, and the dangers of falls? (See paragraphs 2.1. and 3.1.)
2. Are cleaning materials that are subject to spontaneous combustion stored separately from other combustibles in closed metal containers? (See paragraph 2.2.3)
3. Are flammable liquids prohibited for cleaning purposes? (See paragraph 2.2.5)
4. Are floors kept clear of water or other slippery materials? Are spills immediately cleaned up? (See paragraph 2.3.3)
5. Are warning signs used to warn patrons and employees of slipping hazards (i.e., "Caution Wet Floor")? (See paragraph 2.3.3)
6. Do supervisors ensure stairways, entrances, sidewalks, and ramps are clear of snow and ice or covered with abrasive materials during inclement weather? (See paragraph 2.3.6)
7. Are all plugs, other than double insulated or those normally not manufactured with ground plugs, equipped with a third/grounding prong frequently checked by supervisors to ensure the grounding prong is not broken or negated? (See paragraph 2.4.3)
8. Are all electrical outlets, switches, or junction boxes guarded with cover plates or other effective means to prevent accidental contact with a live electrical conductor? (See paragraph 2.4.6)
9. Is a means provided (such as lockouts, unplugging, and marking with warning signs, etc.) to ensure no electrical power is available to machines before maintenance or adjustment is performed or cleaning moving parts? (See paragraph 2.4.10)
10. Are manufacturer's manuals or locally developed operating instructions, to include job safety, maintenance, lubrication, and inspection, available for all machinery or equipment? (See paragraph 2.6.1)
11. Do operators inspect their equipment or machines prior to the start of each shift to ensure all safety devices and (or) guards, as well as, operating components are in good working order? (See paragraph 2.6.6)
12. Is adequate guarding provided on all machines or equipment to protect the operator and other employees in the area from machine or equipment hazards? (See paragraph 2.6.7.)
13. Is personal protective equipment (PPE) provided, used as required, and maintained in satisfactory condition by employees? (See paragraph 2.9)
14. Are non-skid shoes provided and worn by all employees working in areas where floors may become wet, greasy, or otherwise slippery? (See paragraph 2.9.4)