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MIL-STD-1105E

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SUPERSEDING

MIL-STD-1105D

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# MILITARY STANDARD

## SANITARY STANDARDS FOR BAKERIES



AMSC N/A

**FSC 8920**

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**MIL-STD-1105E**

**DEPARTMENT OF DEFENSE**

Washington, D.C. 20310-2300

**Sanitary Standards for Bakeries**

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.
2. The proponent agency of this document is the Office of The Surgeon General. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commandant, Academy of Health Sciences, U.S. Army, ATTN: HSHA-MV, Fort Sam Houston, TX 78234-6100, or use DD Form 1426 (Standardization Document Improvement Proposal) which is self-addressed appearing at the end of this document.

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Enclosure: DD Form 2387 (Bakery Sanitary Compliance Checklist)

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### 1. SCOPE

**1.1 Purpose.** This standard establishes general sanitary requirements for bakeries.

**1.2 Application.** This standard is applicable to all types of plants supplying bakery products destined for Armed Forces procurement. Compliance with this standard is mandatory for the listing of plants in the Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement (short title: the "Directory") as provided in AR 40-657/NAVSUPINST 4355.4/MCO P10110.31 and AFR 161-32.

**1.3 Objectives.** This standard is intended to insure clean, wholesome bakery products that are free from chemical, microbiological, and physical contaminants and to prevent the transmission of foodborne disease to members of the Armed Forces.

**1.4 Limitations.** This standard will not be used to determine the capability of an establishment to produce or furnish products or services which are in compliance with specifications or other purchase descriptions.

### 2. REFERENCED DOCUMENTS

**2.1 Government Documents.** The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this standard to the extent specified herein:

#### Environmental Protection Agency (EPA)

Code of Federal Regulations (CFR), Title 40, Protection of the Environment, Parts 100 to 149 and Parts 150 to 189

(Application for copies should be addressed to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

#### U.S. Department of Agriculture (USDA)

List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs

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(Application for copies should be addressed to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

**U.S. Department of Health and Human Services (HHS)**

CFR, Title 21, Food and Drugs, Parts 100 to 169 and Parts 170 to 199

(Application for copies should be addressed to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

**U.S. Department of Defense**

AR 40-657/NAVSUPINST 4355.4/MCO P10110.31 - Medical Services, Veterinary/Medical Food Inspection and Laboratory Service

AFR 161-32 - Aerospace Medicine, Food Safety and Inspection Program

(Application for copies should be addressed to the applicable purchasing agency.)

**2.2 Other Publications.** The following documents form a part of this standard to the extent specified herein: (Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.)

**Baking Industry Sanitation Standards Committee (BISSC)**

Sanitation Standards for the Design and Construction of Baking Equipment and Machinery

(Application for copies should be addressed to the Baking Industry Sanitation Standards Committee, 111 E. Wacker Drive, Suite 600, Chicago, Il 60601, (312)664-6610)

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### **Illuminating Engineering Society (IES)**

#### IES Lighting Handbook

(Application for copies should be addressed to Illuminating Engineering Society, 40 United Engineering Center, 345 East 47th Street, New York, NY 10017.)

### **National Sanitation Foundation (NSF)**

NSF Standard #37 for Air Curtains for Entranceways in Food Establishments

(Application for copies should be addressed to the National Sanitation Foundation, PO Box 1468, Ann Arbor, MI 48106.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

## **3. DEFINITIONS**

**3.1 Adequate.** Methods which are needed to accomplish the intended purpose in keeping with accepted public health practices (21 CFR 110).

**3.2 Adulterated.** The condition of a food (a) if it bears or contains any poisonous or deleterious substance in a quantity which may render it injurious to health; (b) if it bears or contains added poisonous or deleterious substance for which no safe tolerance has been officially established, or in excess of such tolerance if one has been established; (c) if it consists in whole or part of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for human consumption; (d) if it has been processed, prepared, packed, or held under insanitary conditions, whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health; (e) if it is in whole or in part the product of a diseased animal; (f) if its container is composed in whole, or in part, of any poisonous or deleterious substance which may render the contents injurious to health; or (g) if any substance has been added thereto or mixed or packed therewith so as to increase its bulk or weight, or reduce its quality or strength, or make it appear better or of greater value than it is.

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**3.3 Bakery.** The building(s) or part(s) thereof, used for or in connection with the manufacturing, processing, packaging, labeling, selling, or holding of human foods consisting basically of flour or meal.

**3.4 Bakery Products.** A product manufactured in a bakery, such as, biscuits, bread, bread crumbs, brownies, buns, cakes, cookies, crackers, croutons, crullers, doughnuts, pastries, pies, pretzels and/or rolls.

**3.5 Cleaning.** The physical removal of food residues, ingredients, and other soiling materials by approved methods.

**3.6 Contamination.** The act or process of exposing the product to an adulterant or unwholesome material.

**3.7 Corrosion-resistant Material.** A material which is impervious and capable of resisting abrasion during ordinary use. The material is able to maintain its surface characteristics under the prolonged exposure to ingredients, products, cleaning, and sanitizing compounds and/or solutions and is unaffected by hot water.

**3.8 Critical Control Point.** Critical Points in a food process where there is a high probability that improper control may cause, allow or contribute to a hazard or to filth in the final food or decomposition of the final food (21 CFR 110).

**3.9 Critical Defect.** An imperfection, practice, or procedure which may result in hazardous or unsafe conditions, or which is likely to prevent the use or performance of an item or product as intended, or cause the product to be injurious to health.

**3.10 Defect.** A product, practice, procedure or condition at variance with specified requirements.

**3.11 Food.** Any raw, cooked, or processed edible substance, ice, beverage, or ingredient used or intended for use or sale in whole or in part for human consumption.

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**3.12 Food contact surfaces.** Those surfaces that contact human food and those surfaces from which drainage onto the food or onto surfaces that contact the food ordinarily occurs during the normal course of operations. "Food contact surfaces" includes utensils and food-contact surfaces of equipment (21 CFR 110).

**3.13 Plant.** The building(s) or part(s) thereof, used for or in connection with the manufacturing, processing, packaging, labeling, or holding of human food (21 CFR 110).

**3.14 Processing.** The steps in the manufacture, preparation, and packaging of a food product into its final form.

**3.15 Production Area.** The room or area in which processing occurs.

**3.16 Product Area.** The production area and all other areas where the product, ingredients, and packaging materials are handled or stored.

**3.17 Sanitize.** Adequate treatment of clean food contact surfaces by a process that is effective in destroying vegetative cells of pathogenic bacteria and in substantially reducing numbers of other microorganisms. Such treatment shall not adversely affect the product and shall be safe for the consumer (21 CFR 110).

**3.18 Toilet Facility.** A fixture maintained within a toilet room for the purpose of defecation and/or urination and which is flushed with water.

**3.19 Toilet Room.** A room maintained within or on the premises of a plant, containing toilet facilities and handwashing facilities for use by employees.

**3.20 Urinal.** A fixture maintained within a toilet room for the sole purpose of urination and which is flushed with water.

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**3.21 Water Closet.** A fixture maintained within a toilet room for the purpose of defecation and/or urination and which is flushed with water.

**3.22 Wholesome.** Conducive to good health and well being.

**4. GENERAL REQUIREMENTS**

**4.1 Sanitary Compliance Rating (SCR).** Establishments that attain an SCR of 90 or more shall be recommended for initial or continued listing in the Directory, provided no critical defects, determined in accordance with 4.2.1 are recorded. When a critical defect is recorded, the inspection of the entire plant will be completed, annotating all deficiencies and an SCR shall still be computed. For initial, special or update inspections where critical defects or an SCR of less than 90 is recorded, the plant shall not be recommended for listing. For routine inspections where critical defects or an SCR of less than 90 is recorded a special inspection will be conducted to determine final recommendations concerning listing in the Directory.

**4.2 Bakery Sanitary Compliance Checklist (DD Form 2387).** The Sanitary Compliance Checklist (DD Form 2387) will be utilized to record all defects during initial, special or update inspections. An abbreviated form may be used for routine inspections. A completed copy of the inspection form used will be provided to the plant management upon completion of the inspection. Sanitary requirements are set forth in this military standard and are itemized as sanitation defects in column 1 of the checklist. Individual defects are given assigned points in column 2 of the checklist unless defects are designated as critical (see Paragraph 3.9). A copy of this form is located at the end of this publication for local reproduction. The form will be locally reproduced on 8 1/2 X 11-inch paper. Electronic versions of the checklist are authorized.

**4.2.1 Recording of Defects.** The inspector designates as critical or numerically rates the observed sanitation defects. The numerical rating shall be within the range of the assigned defect points in column 2, and be recorded in column 3. Any defect entry and related defect points that are not applicable to the plant being inspected shall be deleted by lining out the non-applicable defect and assigned defect points. Non-applicable defect points shall be subtracted from the total number of

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assigned defect points when totaling column 2. In instances where the inspector considers a defect to be of such magnitude as to constitute a serious health hazard, the numerical rating shall be deleted in column 2, and the word "critical" shall be recorded in columns 2 and 3. Defects designated as critical in the checklist may not be downgraded or assigned defect points.

**4.2.2 Computation of the Sanitary Compliance Rating.** To compute the SCR, columns 2 and 3 are totaled and used as shown in the following formula:

$$\frac{\text{Net total of column 2} - \text{Net total of column 3}}{\text{Net total of column 2}} \times 100 = \text{SCR}$$

The SCR assigned will be rounded to the nearest whole percent (i.e. 0.01 to 0.49 will round down and 0.50 to 0.99 will round up).

**4.2.3 Additional Requirements.** Checklist items pertaining to "Other regulatory agencies concerned with sanitation of this establishment and Methodology" must be completed for every initial, special or update inspection. The methodology section will be completed in sufficient detail that anyone reading the report can visualize procedures from beginning to end. A Hazard Analysis Critical Control Point (HACCP) analysis of the plant processing system shall be included. Such an analysis should include a diagram of the facility, whereon critical control points (See Para 3.8) in the process are identified.

**4.2.4 Remarks/Recommendations.** Numerical and critical defects shall be explained in the remarks section in sufficient detail to clearly describe the condition which resulted in the rating. Deficiencies not listed in the checklist that are observed and considered by the inspector to be of sufficient importance will likewise be explained in this section.

## 5. DETAILED REQUIREMENTS

**5.1 Premises.** The premises shall present a clean and orderly appearance. They shall be well drained and free of environmental conditions and/or materials that are a nuisance or a hazard to sanitation. The area shall be free of weeds, debris, and unused equipment and materials. The area shall be free of waste materials that are stored or handled in such a manner as to be a

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potential health hazard. The approaches to receiving and shipping docks shall be kept clean and maintained to minimize dust.

**5.2 Construction of Building.** The building shall be large enough to accommodate the operation without hampering sanitary practices. Floors, walls, and ceilings shall be constructed of materials that can readily be kept clean, sanitary, and in good repair. Overhead wiring, pipes, hangers, ducts, etc. will be constructed or appropriately enclosed to prevent contaminants such as dust, paint or other debris from falling on food or food contact surfaces. Ceilings shall be free of peeling paint. Exterior openings, including doors, windows, conveyor openings, pipe openings, and vents, shall be in good repair. Exterior openings shall be equipped with screens or other effective means to prevent the entrance of insects, birds, and/or other animals. When the screening of openings is impracticable, such as in receiving areas, flying insect entry may be controlled by properly positioned air curtains or overlapping plastic strips large enough to cover the total door opening. Air curtains shall comply with NSF Standard No. 37 for Air Curtains for Entrancesways in Food Establishments. Screen doors shall open outward and be self-closing. Rooms in the processing areas shall not open directly into barns, stables, living quarters, toilet rooms, garages, retail sales stores, or maintenance shops. Facilities shall be provided for storing raw materials, packing and packaging materials, and finished products.

**5.2.1 Bulk Unloading Facilities.** Facilities used for bulk unloading from tankers shall be constructed of smooth concrete or equally impervious material, with the floor properly sloped to drain, and equipped with trapped drains of sufficient size. Facilities shall be provided for adequate washing and sanitizing of tanks, bins, piping, pumps, and other items of equipment used in bulk receiving operations. Tank manholes shall be protected against contamination from dust and falling debris.

**5.2.2 Construction of Toilet/Dressing Rooms, and Handwashing Facilities.** A sufficient number of sanitary toilets, water closets, and/or urinals shall be provided. Toilet rooms shall be conveniently located, constructed of materials that can be easily and satisfactorily cleaned and sanitized, and separately vented to the outside. Toilet rooms shall be constructed so that they do not open directly into rooms or areas where components or bakery products are processed or stored. Doors shall be tight-fitting and self-closing.

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**5.3 Lighting.** Each room shall have sufficient natural or artificial lighting for the purpose for which it is to be used. Lighting intensities shall conform to the intensities established in the latest edition of the IES Lighting Handbook. Lights in processing areas shall be equipped with protective shields or shall be of such construction that they will not shatter if broken.

**5.4 Ventilation and Humidity.** Humidity shall be regulated in conjunction with ventilation or air movement to control condensation, objectionable odors, and mold growth on ceilings and walls in all areas. Air for ventilation shall be adequately filtered or directed outward as appropriate to prevent contamination. Ventilation systems shall be kept clean and maintained in good repair.

**5.5 Water Supply.** The water supply shall be readily accessible, of a sufficient quantity, and have an acceptable sanitary quality as established in the 40 CFR; military service regulations; or acceptable host country drinking water standards as determined by the Major Command (MACOM) Surgeon. The water heater shall be of such capacity so as to be able to furnish a sufficient supply of hot water to meet the plant's cleaning and sanitizing requirements at all times throughout a working day. There shall be mixing valves at all scullery sinks and hose connections. There shall be no cross-connection between potable and nonpotable lines. There shall be protection against possible back-siphonage. There shall be effective protection of wells from contamination by surface drainage or floods. Bacteriological examination and water test results shall be maintained at the plant to show the water supply has been approved by Federal, State, or local health authorities within the past six months. Samples for testing must be obtained from faucets located within the plant. If the plant does not have such evidence of water potability, applicable military service regulations governing potable water supplies will be followed to approve the water supply(ies). Within the Continental United States (CONUS), Hawaii, Alaska, Commonwealth of Puerto Rico, The U.S. Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands, a water supply approved by a Federal, State, or local health authority will be considered potable, if the samples drawn for testing were taken from the faucets located in the establishment.

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**5.5.1 Nonpotable Water.** Nonpotable water outlets, such as private wells, if present, shall be located and identified by color codes and labeled (labels will be multilingual as appropriate) nonpotable to preclude the use of nonpotable water for other than the purposes designated. The color code used shall be readily identifiable, prominently displayed, and clearly understood by plant personnel. The use of nonpotable water is permitted for the flushing of toilet facilities, for boilers, and for such other similar uses provided it does not directly, nor indirectly, contact the ingredients, product, packaging materials, product area, or personnel handling the product.

**5.6 Ice (if used).** Ice shall be made from a supply of potable water which meets the requirements of paragraphs 5.5. It shall be manufactured, handled, stored, and used in a sanitary manner.

**5.7 Disposal of Wastes.** Liquid wastes shall be conveyed to a public sewer system through inclosed piping or shall be disposed of in another sanitary sewage system approved by State/local or host country health authorities. Floor drains shall be functional and properly trapped. Dry and product waste shall be placed in suitable covered receptacles conveniently located throughout the plant and premises. All waste shall be collected and disposed of at frequent intervals in a sanitary manner to prevent insect and rodent attraction and development of objectionable odors.

**5.8 Toilet and Handwashing Facilities.** A sign directing employees to wash their hands before returning to work shall be conspicuously posted in all toilet rooms, break rooms and production areas. Handwashing signs shall be multilingual as appropriate. Handwashing facilities with running water at tepid (approximately 105°F) temperature for handwashing, soap (liquid or powder), soap dispenser, sanitary single-service towels or hot air blower-type hand dryers, will be conveniently located in all toilet rooms and throughout processing areas. **NOTE: Warm air hand dryers shall not be the sole means of hand drying for employee lavatories.** Toilet rooms and fixtures, dressing rooms, and handwashing facilities will be maintained in a clean, orderly manner. There shall be a sanitary waste receptacle in each toilet room. Odor masking devices shall not be used as an attempt to conceal the effects of poor sanitation and/or ventilation. Toilet/dressing rooms shall not be used for storage of cleaning supplies and equipment.

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**5.9 Construction, repair, and maintenance of equipment and utensils.** Equipment and utensils shall be designed, constructed, and used to preclude adulteration of food with toxic lubricants, fuel, metal fragments, contaminated water, or other contaminants. Lubricants used on contact surfaces of product handling and processing equipment shall be edible and nontoxic and shall be used sparingly in a manner that prevents contamination of food or food contact surfaces. The only lubricants authorized (within the stated limitations) are those listed in 21 CFR 178.3570. Many of these authorized lubricants are found in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs". The MACOM Surgeon may provide a list of other lubricants from 21 CFR 178.3570. Equipment and utensils shall be of such material and workmanship so as to be smooth, easily cleanable, and durable. General principles of sanitary design and construction for specific machines used in bakeries are covered in "Sanitation Standards for the Design and Construction of Bakery Equipment and Machinery." The food contact surfaces of such equipment and utensils shall, in addition, be easily accessible for cleaning, nontoxic, corrosion-resistant, and consist of nonabsorbent material. Food contact surfaces and solder shall not contain antimony, bismuth, brass, copper, cadmium, lead, zinc, and/or other toxic materials. Solder on food contact surfaces shall be hard solder. Equipment shall be located in a manner that provides adequate space for cleaning, maintenance, and inspection. Compressed air introduced into the product area shall be filtered. If piston type compressors are used, the air lines shall be equipped with oil and water traps.

**5.10 Cleaning and sanitizing treatment.** Methods used for cleaning and sanitizing shall not contaminate nor adulterate the product. All products shall be moved sufficiently away or otherwise protected prior to the start of cleaning to avoid contamination or adulteration by splashing. All multiple-service containers, equipment, and utensils used in handling, processing, storing, or transporting of exposed product shall be disassembled, as appropriate, cleaned thoroughly, and sanitized after use. Chemicals used in cleaning and sanitizing treatments shall be properly labeled and stored. Cleaning and sanitizing chemicals shall be used as prescribed by the manufacturer's label directions. The only sanitizers authorized (within the stated limitations) are those listed in 21 CFR 178.1010. Many of these are found in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs". The MACOM Surgeon may provide a list of other sanitizers from 21 CFR 178.1010. When chemical sanitizers are used, a test kit, other devices, or approved methods that

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adequately measure the correct concentration of the solution shall be available and used. If water is used as a surface sanitizer, it must be not less than 170<sup>0</sup>F (77<sup>0</sup>C) with at least 30 seconds contact time. All rooms and areas used to receive, inspect, process, or store components or the finished products shall be maintained in a clean, sanitary manner to preclude the possibility of microbiological, chemical, or physical contamination (i.e. dust, dirt, etc.). Cleanup personnel shall be trained in acceptable cleaning and sanitizing procedures. A dust-free method of cleaning shall be used whenever possible. Sifters shall be cleaned at least once every two weeks. Flour-handling equipment, equipment housings that remain dry, and structural surfaces shall be cleaned at least once every four weeks. Food contact surfaces and equipment housing that get wet shall be cleaned daily. Cleaning procedures and schedules for equipment and the general product areas shall be available upon request by the inspector.

**5.11 Methods.** Methods used in processing, handling, and storage shall be conducted in a sanitary manner to prevent contamination or adulteration. Methods shall not contribute to deterioration of the product. Finely-milled flour shall be sifted before use through a US Standard (ASTM) sieve No. 30 or finer, or equivalent bolting cloth or wire mesh screen, which effectively eliminates extraneous material. Plant procedures shall include a Hazard Analysis of Critical Control points and adequate control measures shall be taken at each point.

**5.12 Public Health Controls.** Raw materials will come from approved or exempt sources as required by AR 40-657/NAVSUPINST 4355.4/MCO P10110.31 and/or AFR 161-32. Materials will be inspected upon receipt and those that show evidence of adulteration, contamination, active insect infestation, or any other condition that from a public health or aesthetic standpoint renders the product unfit for human consumption, shall not be accepted by the plant. Open bags or containers of raw materials (i.e. liquid eggs, cinnamon, sugar) should be on a clean, dry surface off the floor and have a date and time placed on them when opened. Means shall be provided to assure adequate public health control of finished product. Means shall include physical, chemical, and microbiological examinations and tests necessary to establish the product has not been adulterated or contaminated. Records of such examinations and/or tests shall be on file and made available to the military inspector.

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**5.13 Cooling and Refrigeration.** Cooler rooms shall be free from objectionable odors and mold. They shall be maintained in a sanitary condition. The coolers and freezers shall be capable of maintaining temperature and humidity necessary for the preservation of the food being stored or processed. Refrigerated rooms shall be equipped with a thermometer, graduated in not more than 2<sup>0</sup>F (1<sup>0</sup>C) divisions and with accuracy of (+/- 2<sup>0</sup>F)(+/- 1<sup>0</sup>C) throughout the specified scale range. Cooling and refrigeration units must not be overloaded.

**5.14 Storing and Storage Facilities.** Storing methods which minimize deterioration and prevent contamination shall be used. Storage facilities shall be sanitary and in good repair. Shelves, cabinets, and dunnage or pallets shall be used where necessary to protect materials from contamination. Single-service articles and packaging materials shall be maintained in sanitary boxes, cartons, tubes, or otherwise protected and handled in a sanitary manner. All storage facilities, including walk-in coolers, must have at least 4 inches between pallets of items and the wall.

**5.15 Control of Insects, Birds, Rodents and Other Animals.** Insects, birds, rodents, and other animals shall be excluded from the plant. Effective measures for the control of insects, birds, rodents, and/or other animals shall be maintained at all times. The presence of any harborage, attractant and/or breeding area for insects, rodents, birds and/or other animals shall not be permitted. If harborage, attractant, and/or breeding areas are located on bordering grounds not under the plant operator's control, care must be exercised in the plant by inspection, extermination, or other means to effect exclusion of pests, dirt, and other filth that may be a source of food contamination. Pesticides (insecticides and rodenticides), if used, shall be limited to those which appear 40 CFR 185. Many such pesticides are listed in the USDA publication, "List of Proprietary Substances and Nonfood Compounds Authorized for Use Under USDA Inspection and Grading Programs". The MACOM Surgeon may recommend additional products from 40 CFR 185. These products shall be used as prescribed by label directions, and shall be handled and stored in a safe manner.

**5.16 Vehicle and transportation facilities.** Vehicles and transportation facilities shall be constructed and operated to protect contents from contamination and deterioration. They shall be kept clean and in good repair. Vehicles used for

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transport of food products will be prohibited from transporting refuge, toxic solvents, petroleum products, or chemicals.

**5.17 Cleanliness and health of personnel.**

**5.17.1 Cleanliness.** All employees shall wash their hands before beginning work and upon returning to work after using toilet facilities, eating, smoking, or otherwise soiling their hands. They shall keep their hands clean and follow acceptable hygienic practices while on duty. Eating, drinking, expectorating, or use of tobacco in any form shall be prohibited in each room and compartment where any food products or supplies are prepared, stored, or otherwise handled. With the exception of plain wedding bands and emergency medical bracelets employees shall not wear any jewelry or fingernail polish. All persons engaged in receiving, testing, processing, manufacturing, packaging, or handling food products shall wear clean, white, or light-colored washable or disposable outer garments that are suitable for the work being performed. Hair nets, caps, beard nets, or other hair restraints which effectively cover hair shall be worn when necessary to prevent contamination of food and food contact surfaces. Employee's personal effects shall not be stored in production areas. A locker or other suitable storage facility will be provided for each employee. Locker rooms and lunch rooms shall be maintained in a clean, orderly fashion at all times.

**5.17.2 Health.** No person afflicted with or a carrier of a communicable disease shall be permitted in any room or compartment where products are prepared, manufactured, or otherwise handled. No person who has a discharging or infected wound, sore, or lesion on hands, arms, or other exposed portion of the body shall work in any processing room or in any capacity resulting in contact with or handling of products, containers, or equipment. Where other health authorities require health certificates, they shall be kept on file at the plant office. Plant personnel shall receive appropriate training in proper food handling techniques, disease control, and food protection principles. They will be cognizant of the danger of poor personal hygiene and insanitary practices.

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**Custodians:**

Army - GL  
Navy - SA  
Air Force - 50

**Preparing activity:**

Army - GL

**Project No:** 8920-0548

**Review Activities:**

Army - MD  
Navy - MS, SA  
Air Force - 50

Copies of this standard for military use may be requisitioned on DD Form 1425 (Specification and Standard Requisition) and submitted to Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094. The title and identifying symbol should be stipulated when requesting copies of military standards.



<b>BAKERY SANITARY COMPLIANCE CHECKLIST</b> (This checklist is an integral part of MIL-STD-1105E and its application is mandatory.)		1. DATE OF INSPECTION (YYMMDD)	
<b>2. FACILITY INSPECTED</b>			
a. NAME		b. ADDRESS	
<b>3. FACILITY OWNER</b>			
a. NAME OF COMPANY OR INDIVIDUAL			b. TELEPHONE NUMBER
<b>4. ACCOMPANYING INDIVIDUAL</b>			
a. NAME		b. TITLE	
SANITATION DEFECTS (1)		ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
<b>5.1 PREMISES</b>			
a. Not well drained		3	
b. Not free from nuisances or sources of contamination, to include approaches to shipping docks and dust control		5	
<b>5.2 CONSTRUCTION OF BUILDING</b>			
a. Not large enough to accommodate the operation without hampering sanitary practices		5	
b. Walls, floors, and ceilings not in good repair or not constructed of materials that can easily be kept clean and sanitary		5	
c. Wiring, pipes, hangers, and ducts not constructed or enclosed to prevent contamination		5	
d. Exterior openings not in good repair or not equipped with screens or other means to prevent the entrance of insects, birds, and/or other animals		5	
e. Air curtains, if used, not in compliance with NSF standards		3	
f. Screen doors not outward opening and not self-closing		3	
g. Processing area opens directly into living quarters, garages, or heavy maintenance shops		4	
h. Facilities for storage of raw materials, packing and packaging materials, and finished products not provided		5	
<b>5.2.1 BULK UNLOADING FACILITIES</b>			
a. Facilities for bulk unloading not constructed as prescribed		3	
b. Facilities for washing and sanitizing of tanks, bins, piping, etc. not as specified		4	
c. Tank manholes not protected from contamination as required		3	
<b>5.2.2 CONSTRUCTION OF TOILET / DRESSING ROOM AND HANDWASHING FACILITIES</b>			
a. Sufficient number of toilets not provided		5	
b. Toilet rooms not conveniently located		4	
c. Toilet rooms constructed of materials that are not easily cleaned		4	
d. Toilet rooms not vented to the outside		3	
e. Toilet rooms open directly into rooms where products are being processed and/or doors not self-closing and tight-fitting		5	
<b>5.3 LIGHTING</b>			
a. Insufficient lighting		4	
b. Lights in processing area not shielded or shatterproof when required		5	
<b>5.4 VENTILATION AND HUMIDITY</b>			
a. Insufficient control of moisture and air movement causing mold and condensates on walls, ceiling, or product		5	
b. Ventilation system not clean and in good repair		5	
c. Air not filtered or directed outward when required		5	
<b>5.5 WATER SUPPLY</b>			
a. Cross-connection exists between potable and nonpotable water supply or sewage system		Critical	
b. Potable water supply found to be nonpotable		Critical	
c. Not easily accessible		4	
d. Inadequate in quantity (hot or cold)		5	
e. Lacks protection against possible back-siphonage		5	
f. Potability certificate not current or available		5	
<b>5.5.1 NONPOTABLE WATER</b>			
a. Nonpotable water outlets not identified by prominently displayed color code and labels		5	
b. Nonpotable water used for other than authorized purposes		5	
<b>5.6 ICE</b>			
a. Not made from potable water		Critical	
b. Not manufactured, handled, stored, or used in a sanitary manner		5	

## BAKERY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
<b>5.7 DISPOSAL OF WASTES</b>		
a. Liquid wastes not disposed of in a sanitary manner	5	
b. Floor drains not functional or properly trapped	3	
c. Dry and product waste not collected in suitable, properly covered containers and disposed of at frequent intervals and/or in a sanitary manner	5	
<b>5.8 TOILET, DRESSING ROOM AND HANDWASHING FACILITIES</b>		
a. Handwashing sign, water at tepid temperature, soap, soap dispenser or appropriate hand drying facilities absent or not conveniently located	5	
b. Toilets, dressing rooms, and handwashing facilities not maintained in a clean, orderly fashion	5	
c. Toilet/dressing rooms used for storage of cleaning equipment and/or supplies	3	
<b>5.9 CONSTRUCTION AND REPAIR OF EQUIPMENT AND UTENSILS</b>		
a. Design, construction, and use of such equipment does not preclude the adulteration of food	Critical	
b. Prohibited lubricants used on product contact surfaces	Critical	
c. Product-contact surfaces not of nontoxic material	Critical	
d. Lubricants not used in a manner that prevents contamination of product or product contact surfaces	5	
e. Product-contact surfaces not of impervious material, not smooth, nor of corrosion-resistant material	5	
f. Equipment not easily accessible for cleaning, maintenance, and inspection	5	
g. Compressed air introduced into the product area not adequately filtered or trapped	4	
h. Equipment and utensils not kept in good repair	5	
<b>5.10 CLEANING AND SANITIZING TREATMENT</b>		
a. Cleaning or sanitizing methods do not prevent product contamination or adulteration	Critical	
b. Cleaning and sanitizing chemicals not used as prescribed by manufacturer	Critical	
c. Unauthorized chemical compounds used for cleaning and sanitizing	Critical	
d. All multiservice containers, equipment, and utensils not cleaned and sanitized after use	5	
e. Cleaning and sanitizing chemicals not properly labeled or stored	5	
f. Test kit or other device not used when chemical sanitizers are utilized	5	
g. Water used as a sanitizer, less than 170°F (77°C) and in contact time less than 30 seconds	5	
h. Receiving, processing, and storage rooms and areas not maintained in a clean, sanitary manner	5	
i. Cleaning and sanitizing supplies not available	4	
j. Cleanup personnel not trained in acceptable cleaning and sanitizing methods	5	
k. Sifters not cleaned thoroughly at least once every two weeks	3	
Other flour-handling equipment not cleaned at least once every four weeks	3	
l. Equipment housings that remain dry and structural surfaces not cleaned at least once every four weeks	3	
m. Parts of equipment which get wet not cleaned daily	3	
n. Cleaning procedures and schedules not maintained	4	
o. Equipment not clean and sanitized	5	
<b>5.11 METHODS</b>		
a. Methods permit contamination, adulteration of product	Critical	
b. Methods permit deterioration of product	5	
c. Finely-milled flour not sifted through a US Standard (ASTM) sieve No. 30 or finer or equivalent bolting cloth or wire mesh or finer screen	4	
<b>5.12 PUBLIC HEALTH CONTROL</b>		
a. Raw materials not from approved or exempt sources as required by AR 40-657 / NAVSUPINST 4355.4 / MCO P10110.31	Critical	
b. Not inspected upon receipt and at other times as needed for determination of adulteration, contamination, or infestation	5	
c. Open bags or containers not on a clean, dry surface off the floor or no date indicating when opened is present	4	
d. Examinations not performed to assure adequate public health control of finished products	5	
e. Records of examination and tests of raw materials and finished products not available	5	
<b>5.13 COOLING AND REFRIGERATION</b>		
a. Cooler rooms not free from objectionable odors or mold and/or not maintained in a sanitary manner	5	
b. Product not stored at proper temperature and humidity	5	
c. Accurate thermometer not indicating a representative air temperature	3	

## BAKERY SANITARY COMPLIANCE CHECKLIST

SANITATION DEFECTS (1)	ASSIGNED DEFECT POINTS (2)	INSPECTOR'S DEFECT POINTS (3)
<b>5.14 STORING AND STORAGE FACILITIES</b>		
a Storing methods do not minimize deterioration or prevent contamination (includes packaging, packing, and single service articles)	5	
b Shelves, cabinets, or dunnage not used where necessary to prevent contamination or minimize deterioration	5	
<b>5.15 CONTROL OF INSECTS BIRDS, RODENTS, AND/OR OTHER ANIMALS</b>		
a Presence of insects, birds, rodents, and/or other animals in production area	Critical	
b Unauthorized insecticides or rodenticides used	Critical	
c Insecticides or rodenticides not used IAW labeled directions	Critical	
d Presence of insects, birds, rodents, and/or other animals in nonproduction area	5	
e Effective measures for the control of insects, birds, rodents, and/or other animals not maintained at all times	5	
f Rodent harborages or insect breeding places present	5	
g Insecticides or rodenticides handled or stored in an unsafe manner	5	
<b>5.16 VEHICLES AND TRANSPORTATION FACILITIES</b>		
a Not constructed or operated to protect contents from contamination or deterioration	Critical	
b Not properly maintained or not clean	3	
<b>5.17 CLEANLINESS AND HEALTH OF PERSONNEL</b>		
<b>5.17.1 CLEANLINESS</b>		
a Employees not washing hands after contamination	Critical	
b Evidence of eating, drinking, smoking, chewing tobacco, or expectorating in product handling areas	5	
c Fingernail polish and/or unauthorized jewelry worn by plant personnel	3	
d Employees not wearing garments/hair restraints suitable for work being performed	5	
e Storage of employee's personal effects in production rooms	3	
f Lunchroom(s) not maintained in clean, orderly fashion	4	
g Each employee not furnished a locker or other suitable storage facility	3	
h Locker(s) not maintained in clean, orderly fashion	4	
<b>5.17.2 HEALTH</b>		
a Employees affected with or a carrier of a communicable or infectious disease not excluded from product areas, and/or employees having an infectious wound, sore, or lesion on hands, arms, or other exposed parts of the body not excluded from contacting ingredients, products, or food contact surface	Critical	
b Prescribed medical examinations of personnel not being made and/or records of such not available	4	
c Plant personnel not instructed in acceptable hygienic practices, disease control, and proper sanitary rules of food handling	5	
<b>6 FORMULA</b>	TOTAL	347
$\frac{\text{Net Total of Column 2} - \text{Net Total of Column 3}}{\text{Net Total of Column 2}} \times 100$	MINUS NONAPPLICABLE DEFECT POINTS	-
	NET TOTAL DEFECT POINTS	
<b>7a. SCR COMPUTATIONS</b>	<b>b. SCR ASSIGNED</b>	<b>c. NUMBER OF CRITICAL DEFECTS</b>
<b>B. OTHER REGULATORY AGENCIES CONCERNED WITH SANITATION OF THIS ESTABLISHMENT</b> (Record the agency, date, and results of last inspection.)		

## BAKERY SANITARY COMPLIANCE CHECKLIST

9. **METHODOLOGY SECTION** (*Record narrative information describing the plant, premises, equipment, and procedures. Discussion of Hazard Analysis Critical Control points and the Diagram of the facility required in para 4.2.3 must be included.*)

**BAKERY SANITARY COMPLIANCE CHECKLIST****10. REMARKS / RECOMMENDATIONS** *(Key discrepancies noted to the subparagraph numbers above.)***11. INSPECTOR**

a. TYPED NAME	b. TITLE	c. GRADE
d. SIGNATURE	e. DATE SIGNED (YYMMDD)	f. TELEPHONE



## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

### INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>I RECOMMEND A CHANGE:</b>	1. DOCUMENT NUMBER MIL-STD-1105F	2. DOCUMENT DATE (YYMMDD) 27 December 1991
3. DOCUMENT TITLE Sanitary Standards for Bakeries		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite if possible. Attach extra sheets as needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code)	
	(1) Commercial (2) AUTOVON (if applicable)	
7. DATE SUBMITTED (YYMMDD)		
8. PREPARING ACTIVITY		
a. NAME U.S. Army Natick RD&E Center	b. TELEPHONE (Include Area Code) (1) Commercial 508-651-4501 (2) AUTOVON/DSN 256-4501	
c. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: STRNC-WTP Natick, MA 01760-5018	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

