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FEDERAL SPECIFICATION

# DISPENSERS, BULK MILK, MECHANICALLY COOLED; AND DISPOSABLE MILK CONTAINERS

This specification was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal agencies.

## 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers self-contained, mechanically-refrigerated cabinets, designed to dispense refrigerated milk and fluid milk products from bulk milk containers in accordance with established sanitary standards. This specification also covers single-service, disposable milk containers, and multiple-service milk containers procured as accessory equipment with the dispensers.

1.2 Classification.

1.2.1 Dispenser and bulk milk container classification. Dispensers shall be of the following types, styles, and sizes, as specified (see 6.2).

Type I - Dispenser with manually-operated, gravity-fed, lift-type or push type dispensing valve
Type II - Dispenser with push-button actuated, gravity-fed, automatic portion control dispensing system

Style A - Front-loading
Style B - Rear-loading

Size 1-5 - One 5-gallon milk can
Size 2-5 - Two 5-gallon milk cans
Size 3-5 - Three 5-gallon milk cans

Type III - Dispenser with push-button actuated, roller-type, flexible-tube pump, automatic portion control dispensing system.

Size 2-5C - Two 5-gallon milk cans (counter-mounted)
Size 2-5U - Two 5-gallon milk cans (under-counter, floor-mounted)
Size 1-10 - One gallon milk can (floor-mounted)
Size 2-10 - Two 10-gallon milk cans (floor-mounted)

NOTE: Dispensers furnished with accessories specified herein shall be identified by the basic type designator plus the accessory designator of table II; e.g. type IAE indicates a type I dispenser with turntable and one set of bulk milk cans.

Bulk milk containers, exclusive of multiple-service milk cans furnished as accessory equipment with the dispensers (see 3.11.4), shall be of the following classes, models, and sizes, as specified (see 3.1.4 and 6.2):

Class I - Single-service, disposable primary milk container with single-service shipping container
Class II - Single-service, disposable primary milk container with multiple-service, cleanable, shipping container

Model A - For type I and type II dispensers
Model B - For type III dispensers

Size 6 - Six-gallon capacity
Size 12 - Twelve-gallon capacity (for sizes 1-10 and 2-10 dispensers)

## 2. APPLICABLE DOCUMENTS

### 2.1 Government documents

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein:

Federal Specifications:

BB-F-1421 - Fluorocarbon Refrigerants
HH-I-524 - Insulation Board, Thermal (Polystyrene)
RR-C-83 - Can, Milk, Steel Tinned
PPP-B-601 - Boxes, Wood, Cleated-Plywood
PPP-B-636 - Boxes, Shipping, Fiberboard
PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall

Federal Standard:

FED-STD-123 - Marking for Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

(Single copies of this specification and other Federal Specifications, required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.)

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specifications:

MIL-V-173 - Varnish, Moisture-and-Fungus-Resistant (for Treatment of Communications, Electronic, and Associated Equipment
MIL-R-12323 - Refrigerators and Related Equipment, Packaging and Packing of
MIL-C-22785 - Can, Beverage, Dispenser
MIL-M-40600 - Mixer, Fluid, Electric
MIL-R-82047 - Refrigerator, Mechanical, Storage Stand (for Bulk Milk Dispensers)

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129 - Marking for Shipping and Storage
MIL-STD-175 - Sanitary Standards for the Equipment and Methods for the Handling of Milk and Milk Products in Bulk Milk Dispensing Operations

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as Department of Defense (DoD) adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

Air-Conditioning and Refrigeration Institute (ARI):

ARI 52 - Standard for Positive Displacement Refrigerant Compressor and Condensing Units

(Application for copies should be addressed to Air-Conditioning and Refrigeration Institute, 1815 North Fort Myer Drive, Arlington, VA 22209.)

American Society for Testing and Materials:

A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
A176 - Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip
A480 - General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
D3951 - Commercial Packaging, Standard Practice for

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103).

National Sanitation Foundation (NSF):

No. 20 - Commercial Bulk Milk Dispensing Equipment and Appurtenances. Listing of Food Service Equipment

(Application for copies should be addressed to the National Sanitation Foundation, NSF Building, 3475 Plymouth Road, Ann Arbor, MI 48106.)

Underwriters Laboratories Inc., (UL):

UL 471 - Commercial Refrigerators

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

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

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Description. The dispensers shall consist essentially of an upright rectangular cabinet mounted on four legs with a refrigerated milk storage compartment, a complete refrigeration system, and dispensing mechanisms (see 6.2). The bulk milk containers shall consist of a disposable milk container and a secondary shipping container (see 6.2).

3.1.1 Type I. The dispensing mechanism for type I dispensers shall be a gravity-fed, manually-operated, lift-type or push-type valve with a weight-loaded or spring-loaded operating handle (see 6.2). The valve shall pinch off the dispenser delivery tube to shut off fluid flow when the handle is released. A dispensing valve shall be provided for each container the cabinet will accommodate.

3.1.2 Type II. The dispensing mechanism for type II dispensers shall be gravity fed and shall be designed to dispense automatically a predetermined portion (see 6.2). The dispensing mechanism shall be actuated electrically by a push button conveniently located adjacent to the dispensing station. The portion control system shall be manually adjustable to permit dispensing any fixed portion up to at least 16 fluid ounces. Unless otherwise specified (see 6.2), the portion control shall be adjusted by the manufacturer to deliver 8-ounce portions. On type II dispensers, a dispensing mechanism shall be provided for each container the dispenser will accommodate, except that for three-container dispensers, either two or three dispensing mechanisms shall be furnished, at the option of the supplier.

3.1.3 Type III. The dispensing mechanism for type III dispensers (see 6.2), shall consist of an electrically-operated, push-button actuated, roller-type, flexible-tube pump; a rigid delivery tube assembly designed for insertion through the top of appropriate bulk milk containers; a cabinet-mounted timer to automatically control the pump operation for delivery of a predetermined fixed portion; and a dispensing port. The complete delivery system shall be enclosed in the refrigerated zone. The timer shall be calibrated to deliver any fixed portion up to at least 24 ounces. Sizes 2-5C, 2-5U, and 2-10 dispensers shall be equipped with two separate delivery systems with an externally mounted switch to change over from the empty to the full container.

3.1.4 Single-service, disposable milk containers. Single-service, disposable milk containers shall consist of a primary, disposable milk container, and a secondary shipping container for single- or multiple-service. Single-service milk container and single-service shipping container shall be class I, model A, and class I, model B, (see 6.2). Single-service primary, disposable milk container and multiple-service secondary shipping container shall be class II, model A, and class II, model B. Model A containers shall be suitable for type I and type II dispensers. Model B containers are for use with type III dispensers. All primary milk containers and all secondary shipping containers shall conform to the requirements of MIL-STD-175.

3.1.4.1 Primary containers. Primary containers shall consist of a sanitary, completely sealed, plastic gag or may be an integral part of plastic, single-service shipping containers (see 6.2). The primary container shall include means for filling and for model A shall also include an approved rubber, plastic, or plastic-type single-service delivery tube. Model B containers shall be designed to accommodate the delivery tube of the type III dispensing system. Means for filling the container shall consist of a threaded collar and cap; a snap-action type of closure with metal cap; or an alternate configuration providing equal or better sanitary protection.

3.1.4.2 Shipping containers. Single-service shipping containers shall be fabricated from paperboard, plastic, or other suitable material; shall be designed to enclose and protect the primary filled container during shipment and use; and shall be so constructed as to preclude reuse. Multiple-service shipping containers shall be fabricated of dairy metal or other approved material; shall be designed to enclose and protect the primary filled container during shipment and use; and shall be so constructed as to permit thorough cleaning for reuse as the disposable primary containers are replaced. The width and height of model A, size 6 shipping containers shall not exceed 10 inches and 21 inches respectively (see 6.2). The dimensions of the size 12 containers for type III dispensers shall be consistent with the interior cabinet dimensions of standard models of type III dispensers.

3.1.5 Delivery tube. The dispenser delivery tube shall have 5/16-inch +/- 1/64-inch inside diameter an outside diameter, of 0.450 +/- 0.15 inch at the pinch-off point and shall conform to MIL-STD-175 and NSF No. 20. The dispenser

valve and tube shall be compatible, shall function properly, and shall not allow leakage or permit dripping after the lift- or push-handle is released.

3.2 First article. When specified (see 6.2), the supplier shall furnish a complete bulk milk dispenser and container for first article inspection and approval (see 4.2.1 and 6.5).

3.3 Standards compliance. The milk dispensers shall meet the following applicable standards for sanitary and safety requirements:

a. MIL-STD-175
b. NSF No. 20
c. UL 471

The milk containers and shipping containers shall meet the sanitary requirements of MIL-STD-175 and NSF No. 20.

3.3.1 Certification. Prior to approval of the first article or prior to the first shipment, the supplier shall submit satisfactory evidence for approval of the contracting officer or his authorized representative that the dispensers and the milk and shipping containers he proposes to supply under this specification meet the requirements of the standards specified in 3.3. Acceptable evidence of meeting these standards will be as follows:

a. MIL-STD-175 - A certified statement that the dispenser and container meet the applicable requirements of the standard. Conformance to MIL-STD-175 shall also be confirmed when applicable tests of this specification are performed.
b. NSF No. 20 - Listing of the model being furnished in the current edition of the NSF Listing of Food Service Equipment and authorized display of the NSF seal on the finished dispensers, or a letter of certification for the dispenser issued by NSF under its special one-time evaluation certification service for equipment being furnished under a Government contract.
c. UL 471 - A UL-approved listing and listing mark.

3.3.2 Alternate certification. In lieu of the certification required under 3.3.1(b) and 3.3.1(c), acceptable evidence of meeting the requirements of the standards cited will be a certified test report from a recognized independent testing laboratory, acceptable to the contracting officer with the advice of the Army Surgeon General, indicating a milk dispenser and container identical to the items to be furnished under this specification have been inspected in accordance with the applicable standard and meet the requirements thereof. Alternate certification shall be submitted prior to approval of the first article, prior to the first shipment, or prior to commencing production unless dispensers and containers will be furnished from the supplier’s current inventory, in which case alternate certification shall be submitted prior to the first shipment.

3.3.3 Applicability. Details for dispenser construction, design, and performance covered by this specification shall be supplementary to the compliance of the standards cited in 3.3 and compliance with and approval of these standard shall not relieve the supplier of the responsibility for the requirements of this specification. Definitions of terms given in MIL-STD-175 and NSF No. 20 shall be applied as required in interpreting and applying the requirements of this specification. The requirements of MIL-STD-175 and NSF No. 20 shall also apply to containers.

3.4 Standard commercial product. The milk dispenser and container shall, minimum, be in accordance with the requirements of this specification and of the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer's standard commercial product, shall be included in the milk dispenser and container being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.5 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.6 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless it is specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification unless otherwise specified.

3.6.1 Corrosion-resisting steel. Corrosion-resisting steel shall be class 302 or 304 of ASTM A167, or class 430 of ASTM A176. Any metallic components of the dispensing system in direct contact with the milk shall be fabricated in corrosion-resisting steel having a nominal chromium and nickel content of not less than 18 and 8 percent respectively.

3.6.2 Insulation. Insulation shall be nonmoisture absorbing material, homogeneous throughout, of the nonsettling type, and shall otherwise conform to NSF No. 20. The insulation shall have commercially rated "K" factors specified below expressed in terms of British thermal units per hour square foot per inch of thickness per degree Fahrenheit, temperature difference at a mean temperature of 75 degrees F. Loose fill type insulation will not be acceptable.

3.6.2.1 Pre-expanded insulation. Pre-expanded insulation shall be polystyrene material conforming to class A, type I or class A or B, type II of HH-I-524.

3.6.2.2 Foamed-in-place insulation. Foamed-in-place insulation shall be polyurethane material having a "K" factor of not more than 0.15 and a core density of not less than 1.6 pounds per cubic foot (pcf).

3.6.2.3 Semirigid insulation. Semirigid insulation shall be "B" fiber or finer industrial type fiberglass with a "K" factor of not more than 0.260, a density of at least 1.0 but not more than 3.0 pcf, and shall be held together with a thermosetting binder.

3.6.3 Refrigerant. The refrigerant shall be type 12 (dichlorodifluoromethane) or type 22 (chlorodifluoromethane) of BB-F-1421.

3.6.4 Dissimilar metals. In fabricating the dispenser cabinet, the use of dissimilar metals in intimate contact with each other shall be avoided wherever possible to minimize galvanic corrosion. When use of dissimilar metals cannot be avoided, the joints or contact areas shall be protected against galvanic corrosion by plating, coating, gasketing, or other interposing material unless protection is inherently provided by area relationships of the anodic and cathodic materials.

3.7 Design. All dispensers and containers covered by this specification shall be designed to meet the requirements of the applicable standards specified in 3.3.

3.7.1 Types I and II. The type I and type II dispensers shall be designed for counter- or stand-mounting or for mounting on refrigerated storage stands (see 6.3). The design shall provide for loading the bulk milk containers into the refrigerated storage compartment from either the front or the rear in accordance with the style specified (see 1.2.1). The dispenser designs shall be predicted on the size, weight, and loading impact of filled, 5-gallon, dispenser type milk cans conforming to MIL-C-22785. Accordingly, the minimum interior dimensions of the storage compartment and the maximum outside dimensions of the cabinet shall be as specified in table I. The dispensing mechanism shall allow the milk to flow through the delivery tube in a smooth stream with no dripping after shutoff. No liquid shall remain in the delivery tube on the discharge side of the tube pinch-off point when the control valve has shut off flow. The dispensers shall also be suitable for use with the following types and sizes of single-service and multiple-service containers which conform to and have been approved in accordance with MIL-STD-175:

a. Three-gallon, dispenser type milk cans
b. Three-, 5-, and 6-gallon single-service containers with single-service or multiple-service shipping containers
c. Multiple-service, plastic containers designed for dispenser use

Table I. Dimensions for Type I and Type II dispensers (inches)

| | Interior of Storage Compartment (minimum dimensions) | | | Exterior of Cabinet (maximum dimensions) | | |
|---|---|---|---|---|---|---|
| Dispenser size | 1-5 | 2-5 | 3-5 | 1-5 | 2-5 | 3-5 |
| Width | 11 | 22 | 32 | 16 | 27 | 37 |
| Depth | 11 | 11 | 11 | 20 | 20 | 20 |
| Height | 22 | 22 | 22 | 41 | 41 | 41 |

NOTE: Exterior dimensions include door but do not include door hardware, dispensing mechanisms, or mixers, if furnished.

3.7.2 Type III. Type III dispensers shall be designed for counter- or floor-mounting in accordance with the size specified. Size 2-5C shall be designed for mounting on a stand having an approximate height of 18 inches above the floor to provide a simi-under-counter mounting. All other type III dispensers, including size 2-5U, shall be mounted on casters. The dispenser design shall be predicated on the size, weight, and loading impact of filled, standard milk cans conforming to RR-C-83, 5-gallon or 10-gallon capacity, as applicable, with umbrella covers modified in accordance with 3.11.5. The interior and exterior dimensions of the cabinet shall be in accordance with the manufacturer's standard equipment. The dispensers shall also be suitable for use with the following types and sizes of single-service containers which conform to and have been approved in accordance with MIL-STD-175 and which have been designed to accommodate the type III delivery system:

a. For sizes 2-5C and 2-5U, 5-gallon and 6-gallon single-service containers
b. For sizes 1-10 and 2-10, 5-gallon standard milk cans with modified umbrella covers and cabinet inserts for elevating cans as required; 5-, 6-, 10-, and 12-gallon single-service containers with elevating inserts as required for 5- and 6-gallon sizes

3.7.3 Structural design. All dispensers shall be so designed and constructed that when one end has been raised to form an angle of 45 degrees with the horizontal, there shall be no deformation or misalinement of the dispenser cabinet or component parts.

3.8 Performance. The dispensers shall meet the following performance requirements:

a. Within 60 minutes in an ambient temperature of 110 degrees F, the refrigeration system shall be capable of lowering the temperature of the empty milk storage compartment from 110 degrees F to a stabilized temperature of not more than 40 degrees F.

b. After the interior cabinet temperature has stabilized at not more than 40 degrees F in an ambient temperature of 110 degrees F and the cabinet has subsequently been loaded with filled milk cans, the cabinet temperature shall diverse from the peak reached after the loading operation to a temperature of not more than 40 degrees F in not more than 30 minutes

c. After the temperature of the fluid in the milk cans has been stabilized at 40 degrees F or less, the dispenser shall be capable of continuously maintaining the fluid at a temperature of not more than 40 degrees F for as long as the dispenser is in operation in an ambient temperature of 110 degrees F or at any constant or fluctuating temperature between 65 degrees F and 110 degrees F

d. While operating as specified in 3.8(c), the fluid in the dispensing tube shall not exceed the temperature limitations specified in NSF No. 20

3.9 Cabinet. The dispenser shall consist essentially of a refrigerated storage compartment with an inner liner and outer shell, base assembly, door, legs or casters, hardware, insulation, and panels providing access to the refrigeration system. A thermometer conforming to MIL-STD-175 shall be mounted on the front of the cabinet and shall measure the temperature inside the cabinet.

3.9.1 Outer shell. The outer shell shall be fabricated or formed of corrosion-resisting steel specified in 3.6.1 with a thickness of not less than 24 gage. Removable panels or covers shall be provided as required to provide ready access for servicing of the refrigeration system.

3.9.2 Inner liner. The walls and top of the inner liner shall be fabricated or formed of corrosion-resisting steel specified in 3.6.1 of a thickness not less than 24 gage. The liner bottom shall be corrosion-resisting steel specified in 3.6.1 with a thickness of not less than 18 gage. The liner bottom shall be formed and braced as required to adequately support a full complement of fully-loaded bulk milk cans and to withstand without permanent deflection or distortion the impact normally associated with the loading operation.

3.9.3 Base assembly. The base assembly shall be constructed to support the fully-loaded storage compartment and to house components of the refrigeration system. The primary framing for the base shall consist of structural steel shapes or plates with a thickness not less than 12 gage. The framing shall be of corrosion-resisting metal, metal plated, or treated and painted to resist corrosion.

3.9.4 Door. The door shall consist of a corrosion-resisting steel inner liner and outer shell of the same thickness and finish as the cabinet liner and shell. Insulation shall be as specified in 3.9.1. The door shall be fitted with an NSF-approved gasket. Door framing shall include suitable plastic or synthetic rubber breaker strips to minimize conduction between the cabinet liner and shell. The door shall be hinged on the right unless left side hinges are specified (see 6.2). Door edge vertical reinforcement shall be No. 12 gage corrosion-resisting steel or cold rolled steel.

3.9.5 Hardware. The door latch, striker plate, hinges, and other miscellaneous hardware shall be of corrosion-resisting steel or of chromium-plated ferrous or nonferrous metal. A corrosion-resisting steel door riser shall be provided on the latch side of the size 3-5 dispenser to assure door alinement. The riser shall not damage the door. Except for copper alloys, chromium plating shall be applied over a base coating of copper followed by a nickel coating.

3.9.6 Legs. Legs and casters shall conform to NSF No. 20.

3.10 Refrigeration system. The refrigeration system shall consist essentially of a hermetic motor-compressor unit, a static or forced convection air-cooled condenser, a drier, evaporator sections with capillary tube or thermal expansion valve, and an automatic thermostat control. Design construction and rating of the system shall be in accordance with ARI 520. The condensing unit shall have an application rating (not a standard rating) to meet the performance requirements of 3.8 at the specified ambient temperatures. In no case shall the condensing unit manufacturer's established rating be less than 1/8 horsepower (hp), for dispensers with capacities up to and including 14 gallons or less than 1/6 hp for dispensers having capacities of 15 gallons or over. Evaporator sections shall be located or designed to be insure compliance with 3.8(d). Refrigerant piping or tubing shall be securely attached to the inner liner by means of soldering or welding. Refrigerant systems shall be completely dehydrated, fully charged, and tested for leaks prior to shipment. Unless otherwise specified (see 6.2), the refrigeration unit shall be designed for operation on nominal 120-volt, 60 Hertz, (Hz), single phase, alternating current (ac). A low pressure sensing switch shall be provided in the event that loss of refrigerant charge becomes sufficiently low and shut off the unit automatically. The low pressure sensing switch shall be of the manual reset type.

3.11 Accessory equipment. When specified (see 6.2), dispensers shall be furnished with one or more of the accessory items listed in table II.

TABLE II. Accessory Equipment

| Accessory Designator | Item | Applicable Dispenser Types | Requirement Paragraph |
|---|---|---|---|
| A | Turntable; single dispenser: mounting | I and II | 3.11.1 |
| B | Turntable; back-to-back dispenser mounting | I and II | 3.11.1 |
| C | Mixer | I and II | 3.11.2 |
| D | Trays | I, II, and III | 3.11.3 |
| E | Milk cans, dispenser type (one set) | I and II | 3.11.4 |
| F | Milk cans, standard type (one set) | III | 3.11.4 |

TABLE II. Accessory Equipment

| Accessory Designator | Item | Applicable Dispenser Types | Requirement Paragraph |
|---|---|---|---|
| G | Umbrella covers, modified (one set) | III | 3.11.5 |
| H | Elevating inserts | III | 3.11.6 |
| J | Stand, 33 inch | I and II | 3.11.7 |
| K | Stand, 18 inch | III Size 2-5C | 3.11.7 |

3.11.1 Turntable. The turntable shall be designed to accommodate the size dispenser being furnished and for mounting of either a single dispenser or two dispensers back to back in accordance with table II. The turntable shall be constructed of aluminum or steel and shall be ball-bearing mounted. The turntable shall be designed to rotate at least 180 degrees and shall be equipped with a positive locking device.

3.11.2 Mixers. Mixers shall be designed specifically for mounting on the door of the dispenser cabinet and shall otherwise conform to MIL-M-40600, except that mixing containers will not be required. Unless otherwise specified (see 6.2), the number of mixers mounted on each dispenser shall equal the number of dispensing valves.

3.11.3 Trays. Drip trays for type I and type II dispensers shall consist of a shallow drain pan with a removable corrosion-resisting steel louvered cover. The pan may be plastic or corrosion-resisting steel. The drip trays shall be of the full length, continuous type designed for placement on the counter or attachment beneath the dispensing station or, for type I, may at the option of the supplier, be of the individual type designed for attachment to the cabinet beneath each dispensing valve. Tray slides for type III, size 2-10 dispensers shall be located on the front of the cabinet beneath the dispensing ports and shall be designed in accordance with the manufacturer's standard practice to support food serving trays.

3.11.4 Milk cans.. Dispenser type milk cans and standard milk cans shall conform to MIL-C-22785 and RR-C-83 respectively. The capacity of the cans shall be as specified in 1.2.1 for the size dispenser being furnished. Unless otherwise specified (see 6.2), one set of cans shall consist of three cans for dispensers accommodating one container, four cans for two-container dispensers, and six cans for three-container dispensers.

3.11.5 Covers. Umbrella covers for type III dispensers shall be modified in accordance with the manufacturer's standard practice to accommodate the milk delivery pipe and flexible tube. The covers shall otherwise conform to the applicable requirements of RR-C-83. One set of covers shall consist of three covers for one-container dispensers, four covers for two container dispensers, and six covers for three-container dispensers.

3.11.6 Inserts. Inserts to adapt sizes 1-10 and 2-10 dispensers for use with 5-gallon cans and 5- and 6-gallon single-service containers shall be made of stainless steel or aluminum. Sizes 1-10 and 2-10 shall be furnished with one and two inserts, respectively, if this accessory is specified in the contract.

3.11.7 Stands. Stands shall be designed to accommodate an individual dispenser of the particular size furnished. Stands shall be of an open base, all welded type with four legs. The nominal height of stands shall be 33 inches for type I and type II dispensers and 18 inches for type III, size 2-5C. A tolerance of +/- 1 inch shall apply to the specified nominal height. The top surface of the stand shall be fabricated of corrosion-resisting steel specified in 3.6.1. Legs shall be steel pipe or tubing suitably reinforced with horizontal rod braces. All steel parts shall be coated to resist corrosion in accordance with NSF requirements except for parts fabricated of corrosion-resisting steel. Unless feet are specified (see 6.2), stands shall be castermounted. Casters shall be not less than 3 inches in diameter and shall be of the ball-bearing, swivel type. Two of the casters shall be equipped with foot-operated locking brakes. When feet in lieu of casters are specified, the feet shall conform to NSF requirements. The stands shall be designed to rigidly support the dispenser loaded with a full complement of milk cans without deformation. Stands shall otherwise be constructed to comply with NSF sanitation requirements. Instructions for mounting dispensers shall be furnished with each stand. Stands shall be furnished with a drip tray. When specified (see 6.2), a drop leaf type slide for holding a serving tray shall be provided.

3.12 Identification marking. Each dispenser shall be marked with the following information in accordance with UL 471:

a. Manufacturer’s name or trademark
b. Manufacturer’s model number or equivalent identification
C. Electrical rating
d. Kind and amount of refrigerant in pounds or ounces
e. Factory test pressures for the high- and low-pressure sides

3.1.3 Finish. The exterior cabinet surfaces and the interior compartment surfaces shall be at least as smooth as a No. 2B finish as defined in ASTM A480 on corrosion-resisting steel. Concealed steel supporting shapes and plates shall be finished as specified in 3.9.4.

3.1.4 Fungus resistance. When specified (see 6.2), electrical components and circuit elements, including terminal and circuit connections, shall be coated with varnish conforming to MIL-V-173 except that:

a. Components and elements inherently inert to fungi or in hermetically sealed enclosures need not be coated
b. Current-carrying contact surfaces, such as relay contact points, shall not be coated

3.15 Commercial publications. Publications furnished with each dispenser shall be the manufacturer’s standard commercial publications as specified (see 6.2).

3.16 Service parts. When specified (see 6.2), service parts shall be furnished and shipped with each dispenser. The service parts required and the quantity thereof shall be as specified in the contract or when applicable, shall be determined in accordance with the provisioning procedures of the contract.

3.17 Workmanship.

3.17.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finish product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.17.2 Bolted connections. Bolt holes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.17.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with t’@ie rivet holes, and in full contact with the surface of the member.

3.17.4 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.18 Servicing and restoration. Each unit tested shall be serviced and restored to a service condition equal to the original condition of the unit, neglecting nominal wear incurred during the tests. The restoration shall include paint touch-up or repainting, as required for delivery.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.1.2 Standards compliance. The contractor shall make available to the contracting officer or his authorized representative evidence of compliance with tile applicable standards cited in 3.3. The Government reserves the right to examine and test all milk dispensers, milk containers, and shipping containers to determine the validity of the certification.

4.1.3 Test equipment. Unless a commercial laboratory is used for inspection, the manufacturer shall furnish all measuring and test equipment required to conduct the examination and tests specified herein. Temperature measuring instruments shall be accurate to within +/_ 0.5 degrees F.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows.

a. First article inspection (see 4.2.1)
b. Quality conformance inspection (see 4.2.2)

4.2.1 First article inspection. The first article inspection shall be performed on one complete bulk milk dispenser, one milk primary container, and one milk shipping container when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.4.2 and all tests of 4.5 and 4.6. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examinations of 4.4, the tests of 4.6, and the packaging inspection of 4.7. Sampling shall be as specified in 4.3.

4.3 Sampling. Sampling and inspection procedures shall be in accordance with MIL-STD-105. A lot shall consist of all dispensers and containers of the same classification offered for delivery to the Government at one time. A sample unit shall consist of one complete dispenser or one container as resulted. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for a complete reinspection. Resubmitted lots shall be reinspected using tightened inspection. If the rejected lot was screened, reinspection shall be limited to the defect causing rejection. If the lot was reprocessed, reinspection shall be performed for all defects. Rejected lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.3.1 Sampling for examination. The in-process examination shall be performed on samples based on inspection level II and Acceptable Quality Level (AQL) of 2.5 percent defective for major defects and 4.0 percent defective for minor defects.

4.3.2 Sampling for tests. Tests shall be based on inspection level S-4 and an AQL of 2.5 percent defective.

4.4 Examination.

4.4.1 In-process examination. The dispensers shall be examined during fabrication and assembly in accordance with the manufacturer's established quality control program. The quality control methods and procedures shall assure compliance with the requirements of this specification throughout all areas of contract performance including the receipt and identification of material, fabrication of the cabinet and base assembly, installation of insulation and evaporator sections, plating and painting of parts, and final assembly of the dispenser including the installation of the refrigeration system and controls. The quality control program shall be subject to surveillance by the procuring agency or designated representatives thereof. Failure of the manufacturer to demonstrate that adequate quality control was applied to lots submitted for acceptance by the Government may be cause for rejection of the lots.

4.4.2 End-product examination. The first article and production units selected shall be visually examined to determine conformance with this specification. The examination shall be as specified in table III.

TABLE III. Classification of defects.

| Classification | Defects | Requirement paragraph |
|---|---|---|
| Critical: | | |
| 1 | Milk containers not in conformance to sanitary requirements of MIL-STD-175 | 3.1.4 and 3.3 |
| Critical: | | |
| 2 | Delivery tube not in conformance to sanitary requirements | 3.1.4 |
| 3 | Metallic components of dispensing system in direct contact with milk not fabricated as specified | 3.6.1 |
| 4 | Thermometer not in conformance to sanitary requirements of MIL-STD-175 | 3.9 |
| 5 | Leaks in refrigerant system which would allow contact with food product. | 3.10 |
| 6 | Items not packaged for sanitization as required. | 5.1 |

TABLE III. Classification of defects. con't

| Classification | Defects | Requirement paragraph |
|---|---|---|
| Major: | | |
| 101 | Dispensers not of proper classification and description. | 1.2.1 and 3.1 |
| 102 | Containers not of proper classification and description. | 1.2.1 & 3.1.4 |
| 103 | Delivery tube not of proper description, or does not function properly. | 3.1.5 |
| 104 | Items not interchangeable as required. | 3.5 |
| 105 | Material not as specified. | 3.6.1 |
| 106 | Insulation not as specified. | 3.6.2 |
| 107 | Refrigerant not as specified. | 3.6.3 |
| 108 | Dissimilar metals not protected as required. | 3.6.4 |
| 109 | Design not as specified (Each deficiency shall constitute one defect.) | 3.7 |
| 110 | Cabinet not as described. (Each deficiency shall constitute one defect.) | 3.9 |
| 111 | Hardware not as specified. (Each deficiency shall constitute one defect.) | 3.9.6 |
| Major: | | |
| 112 | Legs not as specified. | 3.9.7 |
| 113 | Refrigeration system not as specified (Each deficiency shall constitute one defect) | 3.10 |
| 114 | Accessories not furnished | 3.11 |
| 115 | Accessories not as specified | 3.11 |

TABLE III. Classification of defects. con't

| Classification | Defects | Requirement paragraph |
|---|---|---|
| 116 | Finish not as specified | |
| 117 | Fungus treatment not applied when required or incomplete | 3.14 |
| Minor: | | |
| 201 | Dispenser valve and tube not compatible | 3.1.5 |
| 202 | Identification marking missing or incomplete | 3.12 |
| 203 | Publications missing or incomplete | 3.13 |
| 204 | Parts missing or not as specified | 3.16 |
| 205 | Workmanship not as required | 3.17 |
| 206 | Units not served as required | 3.18 |

4.5 First article tests.

4.5.1 Performance test. The first article shall be tested to verify compliance with the performance requirements of 3.8. This test shall be made under an ambient room temperature of 110 degrees F. Place precalibrated temperature measuring instruments, one in each of the four top corners of the cabinet to obtain interior air-temperature readings. Instruments shall not interfere with the loading operation or cause instrument error due to contact with material other than air. On type I and type II dispensers place other precalibrated temperature measuring instruments, one on the inside of each dispensing tube just above the pinch-off point. Where more than one temperature reading is obtained for the same characteristic, the average reading shall be used for determining conformance. Perform the following:

a. Starting with the dispenser at an ambient temperature of 110 degrees F, operate the equipment, with the cabinet empty, until the cabinet interior temperature is stabilized (see 3.8(a)). Record the temperature shown by instruments when the dispenser thermometer indicates that the cabinet interior temperature is crossing into the safety zone (see 4.6.2) and the time required to reach this temperature

b. Starting with a cabinet interior temperature of not more than 40 degrees F in an ambient temperature of 110 degrees F, load the cabinet with milk container(s), of the specified size, filled with water or milk prechilled to not less than 44 degrees F (see 3.8 (b)). Record the maximum cabinet interior temperature (for information only) and the time required for the temperature to rise to a maximum and then fall, until it crosses into the safety zone as shown by the dispenser thermometer

c. With cabinet loaded, operate the dispenser in an ambient temperature of 110 degrees F. Record the maximum and minimum fluid temperatures

d. Starting with the cabinet loaded, dispense the entire contents of the contents of the containers in individual portions. Record any splashing, dripping, leaking, or any fluid remaining in the tube beyond the pinch-off point

e. During the above tests (b), (c), and (d), record the temperature inside of each dispensing tube as indicated by the precalibrated instruments (see 8.7(d)) and also record the maximum current draw with a suitable ammeter to verify that the electrical rating established under UL 471 is not exceeded. Failure of the dispenser to meet the performance requirements of 3.7, 3.8, and 3.10 shall be cause for rejection of the dispenser

f. Leakage test to deter-mine compliance with 3.10: The refrigeration system shall be tested with an electronic leak detector. In accordance with this test and the test of 4.6.3(d), the largest permissible leak shall be 0.5 ounce per year. Leakage above this rate shall be cause for rejection

4.5 Structural test. To determine compliance with the structural soundness requirements of 3.7.3, raise one end of the completely assembled dispenser, with door latched, until it reaches an angle approximately 45 degrees with the horizontal. The entire test shall then be repeated except that the door shall be unlatched and free to swing. The door may be restrained from swinging open more than 30 degrees by use of flexible means such as rope. Damage to or warpage of the outer shell, inner liner, plastic parts, refrigeration system, door, latches, or legs shall be cause for rejection of the unit.

4.6 Quality conformance tests.

4.6.1 Functional tests. Sample units selected in accordance with 4.3.2 shall be tested to verify compliance with the performance requirements of 3.8(c) except that loading the compartment with milk cans will not be required and the test may be conducted in the ambient temperature at the test site provided the ambient is 65 degrees F or more. The test shall be conducted for a period of not less than 1 hour after the compartment temperature has stabilized at not more than 40 degrees F. Failure of a sample unit to maintain the temperature within the limits specified shall be cause for rejection of the unit.

4.6.2 Thermometer test. During the test of 4.6.1, the thermometer shall be checked to verify compliance with the requirements of MIL-STD-175.

4.6.3 Operational test. Each end item shall be operated to determine compliance with the requirements specified herein. The test shall be conducted at ambient room temperature provided the ambient temperature is 65 degrees F or more. Any of the following defects shall be cause for rejection:

a. Failure of refrigerator to start (see 3.10)
b. Current draw above maximum nameplate rating at rated voltage (see 3.8 and 3.10)
c. Failure of door thermometer to operate (see 3.10)
d. Leaks in the refrigeration system (see 3.10 and 4.5.1(f))

4.7 Preparation for delivery inspection. The inspection of the preservation, packing, and marking shall be in accordance with the requirements of section 4 of MIL-R-12323.

5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be level A or Commercial as specified (see 6.2). Items requiring cleaning and sanitization shall be packaged to maintain the integrity of the item as required in accordance with applicable reference requirements in section 3.

5.1.1 Level A.

5.1.1.1 Dispensers. The dispensers shall be preserved and packaged in accordance with the applicable level A requirements of MIL-R-12323.

5.1.1.2 Accessories. Accessories, such as milk cans, inserts, and mixers shall be packaged in the dispenser compartment as space permits and cushioned to prevent damage during shipment and storage.

5.1.2 Commercial. Material shall be packaged in accordance with ASTM-D3951.

5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

5.2.1 Level A.

5.2.1.1 Dispensers. Dispensers shall be individually packed in accordance with the applicable level A requirements of MIL-R-12323.

5.2.1.2 Accessories. Accessories, such as stands and extra milk cans not packaged with the dispenser, shall be packed in boxes conforming to PPP-B-601 overseas type. Contents shall be cushioned, blocked, and anchored to prevent movement or damage.

5.2.1.3 Single-service, disposable milk containers. Single-service, disposable bulk milk containers shall be packed in quantities specified (see 6.2), in boxes conforming to PPP-B-601 overseas type.

5.2.2 Level B.

5.2.2.1 Dispensers. Dispensers shall be individually packed in accordance with the applicable level B requirements of MIL-R-12323.

5.2.2.2 Accessories. Accessories, such as stands and extra milk cane not packaged with the dispenser, shall be packed in boxes conforming to PPP-B-601, domestic type; PPP-B-640, class 2, or PPP-B-636, class weather-resistant. Contents shall be secured to prevent movement or damage.

5.2.2.3 Single-service disposable milk containers. Single-service disposable bulk milk containers shall be packed in quantities specified (see 6.2), in boxes conforming to PPP-B-640, class 2; or, PPP-B-636, class weather-resistant.

5.2.3 Commercial. Material shall be packed in accordance with ASTM-D3951.

5.3 Marking.

5.3.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.3.2 Civil agencies. Shipments to civil agencies shall marked in accordance with FED-STD-123.

6. NOTES

6.1 Intended use. The bulk milk dispensers are intended for use in mess halls, cafeterias, hospitals, soda-fountains, and any other installations where milk is to be refrigerated and dispensed in a sanitary manner. The dispensers are suitable for dispensing sterile, whole milk; reconstituted milk; sterile, canned milk; fluid milk products; and when permitted by departmental or agency regulations, cold, nonmilk beverages. Reconstituted milk includes instant nonfat dry powdered milk added to water in the proper proportion and agitated with a mixer. The powdered milk is prepared at least a day in advance of use, poured into a sterilized milk container for use with the dispenser and chilled.

6.1.1 Bulk milk containers. Commercial dairies servicing Government-owned dispensers normally supply the whole milk in approved multiple-service or single-service containers for direct use in the particular size and type of dispenser being serviced. For overseas installations where reconstituted milk or sterilized, whole, canned milk is used, procuring agencies may specify that multiple-service bulk milk cans covered herein under 3.11.4 as optional accessory equipment be furnished with each dispenser. Single-service, non-returnable, plastic bulk milk containers are covered herein under 1.2.1,

3.1.4, and 3.1.4.1 primarily for procurement by the Government for use in shipping sterile whole milk to or between activities outside the United States. These requirements are therefore applicable to separate contracts involving the single-service containers only and are not intended for inclusion in contract involving the dispensing equipment.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following in procurement documents:

a. Title, number, and date of this specification.
b. Type, style, and size of dispenser required (see 1.2.1, 3.1, 3.1.1, 3.1.2, and 3.1.3).
c. Class, model, and size of single-service bulk milk containers (see 1.2.1, 3.1, 3.1.4, 3.1.4.1, and 3.1.4.2).
d. Accessory designator, if applicable (see 1.2.1, 3.11, and table II).
e. When automatic portion controls for type II dispensers shall be set to deliver other than an 8-ounce portion (see 3.1.2).
f. When a first article is required for inspection and approval (see 3.2, 4.2.1, and 6.5).
g. When the door shall be hinged on the left instead of the right (see 3.9.4).
h. When the dispenser shall be designed for operation on other than a nominal 120-volt, 60 Hz, single phase, ac power supply (see 3.10).
i. Options applicable to specific accessories (see 3.11).

    1. The number of mixers required, if different (see 3.11.2).
    2. The number of milk cans in each set, if different (see 3.11.4).
    3. When dispenser stands shall be leg-mounted in lieu of caster-mounted (see 3.11.7); when a drop leaf slide for holding a serving tray is required (see 3.11.7).

j. When fungus treatment is required (see 3.14).
k. Commercial publications required (see 3.15).
l. When service parts are required and the parts and quantities to be furnished (see 3.16).
m. Level of preservation and packaging and level of packing required (see 5.1 and 5.2).
n. When single-service bulk milk containers are to be furnished and packed level A or B, number of units to be included in each pack (see 5.2.1.3 and 5.2.2.3).

6.3 Refrigerated storage stands. Refrigerated storage stands for mounting of the bulk milk dispensers are covered by MIL-R-82047.

6.4 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL) and invokes the provisions of paragraph 52.227-7031 of the Federal Acquisition Regulations (FAR), the data requirements will be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with

the approved CDRL (DD Form 1423) incorporated into the contract. When the provisions of FAR 52.227-7031 are not invoked, the data shall be delivered in accordance with the contract requirements.

6.5 First article. When a first article inspection is required, the item will be tested and should be a first article sample, or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one units. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

Custodians

Army - GL
Navy - YD
Air Force - 99

Review Activities

Army - MD, CE
Navy - MS
DLA - GS
Air Force - 84

User Activities

Navy - CG, MC, SA

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
VA - OSS

PREPARING ACTIVITY:

Navy - YD

DOD project 7310-0680

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

INCH-POUND

OO-D-450C
AMENDMENT-2
December 1, 1994
(TO SUPERSEDE)
AMENDMENT-1
February 12, 1993

FEDERAL SPECIFICATION

# DISPENSERS, BULK MILK, MECHANICALLY COOLED; AND DISPOSABLE MILK CONTAINERS

This amendment, which forms a part of OO-D-450C, dated January 21, 1985, is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

PAGE 2

*2.1.1, Federal Specifications: delete the following:

"PPP-B-636 - Boxes, Shipping, Fiberboard"

PAGE 3

2.1.1, Military Standards: add the following:

"MIL-STD-167/1 - Mechanical Vibrations of Shipboard Equipment, (Type I - Environmental and Type II - Internally Excited)
MIL-STD-461 - Control of Electromagnetic Interference Emissions and Susceptibility, Requirements for
MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement of
MIL-STD-1472 - Human Engineering Design Criteria for Military Systems, Equipment and Facilities"

*2.2, American Society for Testing and Materials (ASTM) Standards: add the following:

"ASTM D 5118 - Practice for Fabrication of Fiberboard Boxes"

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 7310

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PAGE 4

3.1.1, line 2, after "Manually operated," delete comma and add: "smooth convex shape arm handle,". 3.1.1, line 6, add the following sentence to end of paragraph: "Dispensers for shipboard use shall be of the type I category."

PAGE 7

3.6.1, after the first sentence add: "Class 430 steel shall be used with magnetic type door gaskets."

PAGE 8

3.6.3, delete paragraph in its entirety and substitute: "3.6.3 Refrigerant. Fluorocarbon refrigerants shall conform to BB-F-1421. Refrigerants which would harm the earth's ozone layer shall not be used."

PAGE 9

Add the following paragraph:

"3.7.4 Human factors criteria. Human factors engineering criteria, principles and practices, as defined in MIL-STD-1472, shall be used in the design of the milk dispensers. The equipment shall permit safe and efficient operation and maintenance by the 5th percentile female to the 95th percentile male as defined in sections 5.6 and 5.9 of MIL-STD-1472. All controls, valves, switches, and gages shall be selected and integrated into the design of the milk dispensers so as to meet the applicable requirements of sections 5.2 and 5.4 of MIL-STD-1472. All controls, valves, switches, and gages shall be clearly and appropriately labeled to identify function. The clearance or free area required around an item shall permit an individual with applicable 5th to 95th percentile body dimensions and physical capabilities (as defined in MIL-STD-1472), to safely operate, maintain, remove, or replace that item. Both physical and visual access shall be provided, along with access for any tools, test equipment, and replacement parts needed. While inspecting for defects and performing tests (see section 4), the equipment shall adhere to the human factors engineering considerations listed herein."

PAGE 10

3.9.4, delete third sentence in its entirety and substitute: "The door shall be fitted with an NSF approved rubber or plastic gasket, or one of the magnetic securing types. When the magnetic securing type door gasket is used, the manufacturer must use class 430 stainless steel for the outer cabinet shell."

PAGE 11

*3.10, delete the last two sentences.

PAGE 14

Add the following new paragraphs:

"3.19 Navy shipboard installation. For Navy shipboard installation, mounting, electromagnetic compatibility requirements, inclined operations, and environmental suitability shall be as follows:

3.19.1 Mounting legs. Each type I milk dispenser specified in 1.2.1 shall be provided with mounting legs. The mounting legs shall be secured to the bottom four corners of the milk dispenser 1 inch from the corner exterior surfaces (i.e., front and sides and back and sides). Each mounting leg shall have a 9/16-inch hole to accept a 1/2-inch bolt.

3.19.2 Electromagnetic compatibility. When specified for shipboard use (see 6.2), the units shall be designed and equipped for electromagnetic compatibility in accordance with the requirements of MIL-STD-461, class A4 for surface ships and class A5 for submarines. The equipment shall meet the emission and susceptibility requirements for CE01, CE03 and RE02 (see 4.6.4).

3.19.3 Inclined operation. Type I milk dispensers shall operate satisfactorily when inclined at an angle of 15 degrees each side of the vertical in each of two vertical planes at right angles to each other, with no spillage of fluid of product when tested as specified in 4.6.5.

3.19.4 Environmental suitability. When specified for shipboard use (see 6.2), type I milk dispensers shall be capable of withstanding ship's vibration and motion. Controls, switches, moving parts, and electrical circuits shall operate under shipboard conditions without malfunction, binding, excessive looseness, or damage when tested as specified in 4.6.6."

PAGE 19

Paragraph number should be "4.5.2" in lieu of "4.5."

PAGE 20

Add the following new paragraphs:

"4.6.4 Electromagnetic interference test. When required for shipboard use, the unit shall be tested by the contractor in accordance with test methods CE01, CE03, and RE02 of MIL-STD-462. The contractor shall furnish written certification that the equipment meets the requirements of MIL-STD-461. Non-conformance with the requirements specified shall constitute failure of the test.

4.6.5 Inclined operational test (type I only). After the test in 4.6.3 is completed, position the type I milk dispenser with the base set at an angle of 15 degrees, then operate the milk dispenser for 30 seconds at each side of the vertical in each of two vertical planes at right angles to each other. At each of these positions observe for conformance with specified requirements in 3.19.2. For the test, the milk dispenser shall be loaded with milk containers, of the specified size, filled with water or milk.

4.6.6 Shipboard environmental test. The milk dispenser under normal operating conditions, shall be tested in accordance with MIL-STD-167/1, type I equipment. The milk dispenser shall be secured to the test machine in the same manner that it will be secured on shipboard (see 3.19.1). Failure of the milk dispenser to perform its function during and after testing, to meet requirements of 3.19.4 shall constitute failure of this test."

PAGE 21

*5.2.2, at the end of the first sentence delete "or PPP-B-636, class weather-resistant." and substitute "or ASTM D 5118."

*5.2.2.3, at the end of the sentence delete "or, PPP-B-636, class weather-resistant." and substitute "or ASTM D 5118."

PAGE 22

6.2, add the following sentence:

"o. When milk dispenser is required for Naval shipboard use (see 3.19, 3.19.1, 3.19.2, 3.19.3, and 3.19.4)."

PAGE 23

Add the following paragraphs:

"6.6 Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, military specifications and standards that have been cleared and listed in DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL) must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract.

6.7 Changes by this amendment. Changes to OO-D-450C since Amendment 1 are indicated by an asterisk in the left margin."

MILITARY INTERESTS:

Custodians

Army - GL
Navy - YD1
Air Force - 99

Review Activities

Army - CE, MD
Navy - MS, SH, CG, MC, SA
Air Force - 84
DLA - GS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
VA - OSS

PREPARING ACTIVITY:

Navy - YD1

(Project 7310-0844)