



# Standard Specification for Commercial Bulk Milk Dispensers, Mechanically Refrigerated<sup>1</sup>

This standard is issued under the fixed designation F2891; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

<sup>ε1</sup> NOTE—Corrected footnotes 5 and 6 in March 2020.

## 1. Scope

1.1 This specification covers commercial bulk milk dispensers which are for dispensing milk in the commercial and institutional food service establishments. These commercial bulk milk dispensers are self-contained, manually-operated, gravity-fed, mechanically refrigerated cabinet(s) with lift-up or push-type valves. These units are intended to dispense refrigerated milk and fluid milk products.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

- A36/A36M Specification for Carbon Structural Steel
- A240/A240M Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.03 on Storage and Dispensing Equipment.

Current edition approved March 1, 2020. Published March 2020. Originally approved in 2010. Last previous edition approved in 2015 as F2891 – 15. DOI: 10.1520/F2891-15R20E01.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- A176 Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip (Withdrawn 2015)<sup>3</sup>
- A276 Specification for Stainless Steel Bars and Shapes
- A366/A366M Specification for Commercial Steel (CS) Sheet, Carbon, (0.15 Maximum Percent) Cold-Rolled (Withdrawn 2000)<sup>3</sup>

### D3951 Practice for Commercial Packaging

- F760 Specification for Food Service Equipment Manuals
- F1166 Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities

### 2.2 ANSI Standards:

- ANSI B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)<sup>4</sup>
- ANSI Z1.4 Sampling Procedures and Tables for Inspection and Attributes<sup>4</sup>
- ANSI/UL 471 Commercial refrigerators and freezers<sup>5</sup>
- ANSI/UL 969 Marking and Labeling Systems<sup>5</sup>
- NSF/ANSI 20 Commercial bulk milk dispensing equipment<sup>6</sup>

### 2.3 Military Standards:<sup>7</sup>

- MIL-STD-167/I Mechanical Vibrations of Shipboard Equipment, Type I—Environmental and Type II—Internally Excited
- MIL-STD-461 Military Standard for Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
- MIL-STD-1399/300 Interface Standards for Shipboard Systems Section 300A, Electric Power, Alternating Current

## 3. Terminology

### 3.1 Definitions of Terms Specific to This Standard:

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

<sup>4</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

<sup>5</sup> Available from UL LLC, Inc., 333 Pfingsten Road, Northbrook, IL 60062, <http://www.ul.com>.

<sup>6</sup> Available from NSF International, P.O. Box 130140, Ann Arbor, MI 48113-0140, <http://www.nsf.org>.

<sup>7</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, Attn: NPODS OR Acquisition Streamlining and Standardization Information System (ASSIST) which is the official source of all documents listed in the DoD Index of Specifications and Standards. The ASSIST can be located at <http://dodssp.daps.dla.mil>.

3.2 *bulk food, n*—food, available to the customer, which is not enclosed in a sealed package, wrapper, or similar container.

3.3 *bulk milk dispenser, n*—equipment that consists of mechanically refrigerated cabinet and a dispensing mechanism that stores and dispenses servings of milk at proper temperatures when operated manually or by machine actuation (other than coin).

3.4 *dispenser, n*—a unit for storage and proportioned transfer of material such as beverages, condiments, food, soaps, or wares.

#### 4. Classification

4.1 Commercial bulk milk dispensers cover by this specification are classified by type, electrical class and size.

##### 4.1.1 Type:

4.1.1.1 *Type 1*—Table top unit.

4.1.1.2 *Type 1A*—Standard mounted with adjustable legs.

4.1.1.3 *Type 2A*—With flange feet to allow the legs to be bolted to counter-top.

4.1.1.4 *Type 3A*—Sealed to counter top.

4.1.1.5 *Type 4A*—Wall mounted.

##### 4.1.2 Electrical Class:

4.1.2.1 *Class 1*—120 V, 60 Hz, 1 phase.

4.1.2.2 *Class 2*—230 V, 50 Hz, 1 phase.

4.1.3 *Size (Capacity)*—Number of Bulk Milk containers ranging from 1 to 5 gal that can be dispensed from a single unit.

4.1.3.1 *Size 1*—1 milk container.

4.1.3.2 *Size 2*—2 milk container.

4.1.3.3 *Size 3*—3 milk container.

4.1.4 This standard does not purport to address all of the sizes that may be available but it provides an overview of the most common sizes used in the industry.

#### 5. Ordering Information

5.1 Orders for commercial bulk milk dispensers in accordance with this specification shall include the following instructions:

5.1.1 ASTM specification number and date issued,

5.1.2 Quantity of units to be furnished,

5.1.3 Type,

5.1.4 Class,

5.1.5 Size (Capacity).

5.2 The following options should be reviewed, and if desired they should be also included in the order:

5.2.1 When federal/military procurement(s) is involved, refer to the supplemental pages.

5.2.2 When other than manufacturer's standard, commercial, and domestic packaging is required, specify packaging requirements.

5.2.3 When special or supplemental requirements, or both, such as inspections, options, accessories, modifications, changes for correctional facilities use, additional nameplate data, etc. are required.

5.2.4 When specified, a certification to ensure that samples representing each lot have been either tested or inspected as directed and the requirements have been met. When specified,

a copy of the certification or test results, or both, shall be furnished to the purchaser.

5.2.5 When specified, a number of dispensing heads needs to be specified during the ordering of the unit.

5.2.6 When specified, the unit has a means to display or indicate cabinet temperature and able to set temperature.

#### 6. Materials and Manufacture

6.1 *General*—Commercial bulk milk dispensers shall conform to the applicable documents listed in Section 2. Materials used shall be free of defects that would 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. The use of used or rebuilt products is not allowed under this specification unless otherwise specified.

6.2 *Hardware and Fittings*—Unless otherwise specified, all hardware and fittings shall be corrosion-resistant to Specifications **A240/A240M** or **A176** or suitably processed to resist corrosion in accordance with the manufacturer's standard practice.

6.3 *Threaded Parts*—All threaded parts shall conform to ANSI B1.1.

#### 7. Physical Properties

7.1 *Design and Manufacturer*—The commercial bulk milk dispenser shall consist of a refrigerated cabinet, area physically supporting the refrigerated cabinet, area below refrigerated cabinet for dispensing milk into a container, and provision to limit the condensate drippings on the counter top. The commercial bulk milk dispenser may include product monitoring system, product probe, and bulk milk container holders to accommodate various types of containers if specified.

7.1.1 *Cooling System*—The cabinet cooling system should be contained in the unit so no accidental contact can be made with moving parts.

##### 7.1.2 Controls:

7.1.2.1 A temperature control must be provided for the cabinet.

7.1.2.2 If specified, control functions such as data/information transfer ports (RS232), product-monitoring capabilities, and water-resistant construction may be provided.

7.1.3 *Accessories*—If specified, accessories such as built-in trim and locks shall be provided.

7.2 *Standards and Compliance*—The commercial bulk milk dispenser shall conform to the requirements of ANSI/UL 471 and NSF/ANSI 20. Acceptable evidence of meeting those requirements shall be current listing mark, label, or symbol of recognized independent testing laboratory and a current listing in the testing laboratory's appropriate publication.

7.2.1 Certification of compliance with the standards cited in this specification shall be provided, if required, in the purchase document.

#### 8. Sampling and Quality Assurance

8.1 When specified in the contact or purchase order, sampling, testing, and quality assurance of finished units shall