Designation: F 2202 – 02

An American National Standard

Standard Specification for Slow Cook/Hold Ovens and Hot Food Holding Cabinets[1]

This standard is issued under the fixed designation F 2202; 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 (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers commercial electric slow cook/hold ovens and hot food holding cabinets.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 8, of this specification. *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 and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 3951 Practice for Commercial Packaging[2]

F 760 Specification for Food Service Equipment Manuals[3]

F 1166 Practice For Human Engineering Design for Marine Systems, Equipment and Facilities[4]

F 2140 Test Method for Hot Food Holding Cabinets[3]

2.2 *Military Publications*[5]*:*

MIL-STD-167/1 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

2.3 *Other Publications:*

ANSI/UL No. 197 Standard for Commercial Electric Cooking Appliance[6]s

ANSI/NFPA 70 National Electric Code[7]

ANSI B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)[8]

ANSI/NSF 4 Commercial Cooking, Rethermalization and Hot Food Holding and Transport Equipment[9]

3. Terminology

3.1 *Definitions:*

3.1.1 *cook function*, *n*—an operating mode for the cook/hold oven only. The cook function requires the ability to set a cooking temperature (200 to 325°F) at which the product is cooked. This function is completed at a preset time or when the product is cooked to a preset internal product temperature, measured with a product probe.

3.1.2 *cook/hold oven*, *n*—a device that can cook food products using natural convective hot air (without a circulating fan or blower). The cook/hold ovens have a typical maximum operating temperature of 325°F. These ovens automatically switch the operating mode from cook to a hold function at the completion of the cook function. The cook and hold functions are defined in 3.1.1 and 3.1.4, respectively.

3.1.3 *hot food holding cabinet (food warmer)*, *n*—a device that can hold precooked food products to preset product holding temperatures. In general, hot food holding cabinet is a device by itself and has a typical maximum operating temperature of 200°F.

3.1.4 *hold function*, *n*—an operating mode for the cook/hold oven and also the main function of the hot food holding cabinet. The hold function allows holding a precooked product above a safe holding temperature as defined by the NSF guidelines (ANSI/NSF 4). In the case of cook/hold oven, the oven is switched to the hold mode automatically after the cook function is completed. The hold function is always the default mode and remains active as long as electrical power to the cook/hold oven or hot food holding cabinet is ON.

3.1.5 *oven cavity*, *n*—portion or area of the oven in which food products are heated or cooked.

[1] This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.02 on Cooking and Warming Equipment.

Current edition approved Oct. 10, 2002. Published December 2002.

[2] *Annual Book of ASTM Standards*, Vol 15.09

[3] *Annual Book of ASTM Standards*, Vol 15.08

[4] *Annual Book of ASTM Standards*, Vol 01.07

[5] Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098

[6] Available from Underwriters Laboratories (UL), Corporate Progress, 333 Pfingsten Rd., Northbrook, IL 60062.

[7] Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

[8] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

[9] Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140.

3.1.6 *pans*, *n*—containers used to hold the food product in the oven cavity: (*1*) a full-size bake or sheet pan is nominally 18 by 26 by 1 in. (457 by 660 by 25 mm), (*2*) a half -size bake or sheet pan is nominally 18 by 13 by 1 in. (305 by 508 by 25 mm), and (*3*) a steam pan is nominally 12 by 20 by 2.5 in. (305 by 508 by 64 mm).

3.1.7 *product monitoring system*, *n*—the cook function of the cook/hold oven is monitored for operating parameters such as starting and ending cook time, oven temperature, internal product temperature. Similarly, the hold function of the cook/hold oven and hot food holding cabinet is monitored for starting time and ending time of hold function, starting and ending oven and internal product temperature. The product monitoring system should at a very minimum be capable of providing the above-mentioned information, if specified.

3.1.8 *product probe*, *n*—a temperature sensing device supplied with cook/hold oven or hot food holding cabinet. The product probe measures the internal temperature of the food product that is cooked or held warm. The product probe may be used to control heat supplied to the oven.

4. Classification

4.1 Cook/hold ovens and hot food holding cabinets covered by this specification are classified by capacity, type, style and electrical class.

4.2 *Capacity*—The capacity of the cook/hold oven and hot food holding cabinet is determined by the number of bake or sheet pans, steam table pans, or a combination thereof that the oven is designed for cooking or holding. For capacity classification, the minimum vertical clearance between rows of pans shall be as follows: bake or sheet pans, 1 in. (25 mm); steam pans, 2.5 in. (64 mm).

4.3 *Type*:

4.3.1 *Type 1*—Cook/hold oven.

4.3.2 *Type 2*—Hot food holding cabinet.

4.4 *Style*:

4.4.1 *Style 1*—Table or countertop units.

4.4.1.1 *Class A*—Half-size single cavity construction; minimum steam pans: 3.

4.4.1.2 *Class B*—Full-size single cavity construction; minimum full size bake or sheet pans: 6.

4.4.2 *Style 2*—Floor standing units.

4.4.2.1 *Class A*—Full-size single compartment, single control; minimum half size bake or sheet pans: 16.

4.4.2.2 *Class B*—Full-size double compartment, double control; minimum full-size bake or sheet pans per cavity: 8.

4.4.3 *Style 3*—Roll-in/mobile units.

4.4.3.1 *Class A*—Roll-in units; minimum full-size bake or sheet pans: 8.

4.4.3.2 *Class B*—Mobile units; minimum steam pans: 16.

4.4.4 This standard does not purport to address all of the styles that may be available, but it provides an overview of the most common types and classes used in the industry.

4.5 *Electrical Class*:

4.5.1 *Class 1*—120 V, 50/60 Hz, 1 phase.

4.5.2 *Class 2*—208 V, 50/60 Hz, 1 phase.

4.5.3 *Class 3*—208 V, 50/60 Hz, 3 phase.

4.5.4 *Class 4*—240 V, 50/60 Hz, 1 phase.

4.5.5 *Class 5*—240 V, 50/60 Hz, 3 phase.

4.5.6 *Class 6*—480 V, 50/60 Hz, 3 phase.

5. Ordering Information

5.1 Orders for cook/hold ovens and hot food holding cabinets in accordance with this specification shall include the following information:

5.1.1 ASTM specification number and date of issue,

5.1.2 Quantity of units to be furnished,

5.1.3 Type,

5.1.4 Style and class, and

5.1.5 Electrical class.

5.2 The following options should be reviewed, and if desired they should be also be 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 and/or test results shall be furnished to the purchaser.

6. Physical Requirements

6.1 *Design and Manufacture*—The cook/hold ovens and hot food holding cabinets shall consist of an oven cavity, sealing type of door(s), heating elements/heating coil, oven racks for physically supporting the steam/sheet pans, and provision to limit condensate/grease drippings on the floor or tabletop surface. The ovens may include a door-sensing mechanism, vents, product probe, grease collection pan, and product monitoring system, if specified.

6.1.1 *Doors*—The door(s) shall have replaceable gaskets.

6.1.2 *Heating System*—The heaters should be attached in a recessed location so no accidental contact can be made. If open resistive coil type heaters are used, it should be electrically insulated from all metal contacts and should be protected from condensate/water dripping.

6.1.3 *Controls*:

6.1.3.1 The following control functions must be provided for the operation of the cook/hold oven:

(1) Able to set oven temperature for cook function and oven temperature for hold function,

(2) Able to set cooking interval-timer or an internal product probe, and

(3) Means to measure or indicate oven cavity temperature.

6.1.3.2 The following control functions must be provided for the operation of the hot food holding cabinet:

(1) Able to set temperature for the hold function, and

(2) Means to measure or indicate oven cavity temperature.

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