
* INCH-POUND *

W-G-2857
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SUPERSEDING
MIL-G-2338L
24 October 1985

FEDERAL SPECIFICATION

GRIDDLES, SELF-HEATING, ELECTRIC; AND STANDS, GRIDDLE

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This document covers commercial electric griddles for counter top, stand mounting, or dresser mounting; and griddle-stands.

1.2 Classification. Griddles shall be of the following types, sizes, classes and styles as specified (see 6.2):

Type I - For counter top use
Type II - Stand mounted

Style 1 - Stand with plain legs
Style 2 - Stand with castered legs
Style 3 - Stand with bolt-down legs

Type III - For flush installation into dresser top

Size 1 - Nominal 18 inches (457 millimeters (mm)) deep by 36 inches (914 mm) wide
Size 2 - Nominal 24 inches (610 mm) deep by 36 inches (914 mm) wide
Size 3 - Nominal 24 inches (610 mm) deep by 72 inches (1829 mm) wide
Size 4 - Nominal 18 inches (457 mm) deep by 24 inches (610 mm) wide
Size 5 - Nominal 24 inches (610 mm) deep by 24 inches (610 mm) wide
Size 6 - Nominal 24 inches (610 mm) deep by 48 inches (1219 mm) wide

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

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Class 1 - 208 volts, 60 hertz (Hz), 1 phase
 Class 2 - 208 volts, 60 Hz, 3 phase
 Class 3 - 220 volts, 60 Hz, 3 phase
 Class 4 - 220 volts, 50 Hz, 1 phase
 Class 5 - 220 volts, 50 Hz, 3 phase
 Class 6 - 380 volts, 50 Hz, 3 phase
 Class 7 - 440 volts, 60 Hz, 3 phase (shipboard use)

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Federal Specification

FF-C-77 - Casters, Rigid and Swivel (Institution Duty)

Federal Standard

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

Military Specification

MIL-R-11337 - Range, Packaging and Packing of

Military Standards

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
 MIL-STD-129 - Marking for Shipment and Storage
 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 the
 MIL-STD-462 - Electromagnetic Interference Characteristics, Measurement
 of
 MIL-STD-1472 - Human Engineering Design Criteria for Military Systems, Equipment and Facilities

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

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ASTM:

ASTM A 167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

ASTM A 176 - Standard Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip

ASTM E 165 - Standard Test Method for Liquid Penetrant Examination

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia, PA 19103.)

National Sanitation Foundation (NSF):

NSF Standard 2 - Food Equipment

NSF Standard 4 - Commercial Cooking, Rethermalization and Powered Hot

Food Holding and Transport Equipment

NSF Annual Listing - Food Service Equipment And Related Products, Components and Materials

(Application for copies should be addressed to NSF International, P.O. Box 130140, Ann Arbor, MI 48113-0140.)

Underwriters Laboratories, Inc. (UL):

UL 197 - Standard for Safety, Commercial Electrical Cooking Appliances

(Application for copies should be addressed to the Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Standard commercial product. The griddles shall, as a minimum, be in accordance with the requirements of this specification and shall be 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 griddles 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.

3.2 Compliance. Prior to approval of the first shipment, the contractor shall submit for the approval of the contracting officer, or his authorized representative, satisfactory evidence that the griddles he proposes to furnish

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under this specification meet the requirements of UL 197 and NSF Standard 4 as applicable. Stands shall conform to the applicable requirements of NSF Standard 2.

3.3 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 otherwise 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. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification.

3.3.1 Stainless steel. Stainless steel shall conform to any of the type 300 or 400 series steels specified in ASTM A 167 or A 176, respectively.

3.4 Griddle design. Type I griddles shall be designed for counter top use. Type II griddles shall be designed for stand mounting. Type III griddles shall be designed for flush installation into dresser top. Griddles shall be of the compact design with provisions for knock-out in the back or bottom for conduit or power-cord connection. Type I and type II shall be capable of being banked side by side. Griddle dimensions shall be as shown in table I.

3.4.1 Electrical characteristics. The input to each griddle shall be at least 18 watts per square inch (per 6.45 square centimeters (cm²)) of effective cooking area. All griddles shall be grounded. Griddles shall be designed for operation on nominal voltage ratings, Hz and phases as specified by class in 1.2.

3.4.2 Temperature time limit. The cooking surface of all griddles shall heat to a temperature of at least 350 degrees Fahrenheit (oF) (177 degrees Celsius (oC)) in not more than 12 minutes when tested as specified in 4.4.1.

3.4.3 Shipboard performance. Griddles procured for shipboard installation (see 6.2) shall be designed so that there will be no spillage of grease or product when the griddle is inclined 15 degrees each side of the vertical in each of two vertical planes at right angles to each other, when tested as specified in 4.4.6.

3.4.4 Shipboard vibration. When specified for shipboard use (see 6.2), griddles shall be capable of withstanding ship's vibration. Controls, switches, moving parts and electrical circuits shall operate under shipboard conditions without malfunction, binding, excessive looseness, or damage when tested as specified in 4.4.8.

3.4.5 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 4.4.9).

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TABLE I. Dimensions, inches (millimeters).

Types I, II and III						
	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Griddle						
Overall height 1/ (maximum) (to cooking surface)	14 (356)	14 (356)	14 (356)	14 (356)	14 (356)	14 (356)
Overall width	36 to 38 (914-965)	36 to 38 (914-965)	69 to 72 (1753-1829)	24 to 26 (610-660)	24 to 26 (610-660)	48 to 50 (1219-1270)
Overall depth (front to rear)	20 to 26 (508-660)	26 to 32-1/2 (660-826)	26 to 32-1/2 (660-826)	20 to 26 (508-660)	24 to 30 (610-762)	26 to 32-1/2 (660-826)
Effective cooking surface, square inches (cm ²), min.	544 (3510 cm ²)	805 (5194 cm ²)	1595 (10,290 cm ²)	352 (2271 cm ²)	420 (2710 cm ²)	980 (6323 cm ²)
Griddle with stand						
Floor to cooking surface	34 to 36 (864-914)	34 to 36 (864-914)	34 to 36 (864-914)	34 to 36 (864-914)	N/A	N/A

1/ Griddle overall height includes legs 4 inches (102 mm) in length except for type III griddles.

3.4.6 Human factors criteria. When shipboard use is specified (see 6.2), human factors engineering criteria, principles, and practices, as defined in MIL-STD-1472, shall be incorporated in the design of the griddles. The equipment shall be designed such that all maintenance and operation shall permit safe and efficient performance 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, switches and gauges shall be selected and integrated into the design of the griddles so as to meet the applicable requirements of sections 5.2 and 5.4 of MIL-STD-1472 and they 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. When establishing accessibility requirements, both physical and visual access must be provided, along with access for any tools, test equipment and replacement parts needed. When inspecting for defects and performing tests (see section 4), the equipment shall adhere to the human factors engineering considerations listed herein.

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3.5 Griddle construction.

3.5.1 Body. The griddle plate shall be supported by an enclosed cabinet-type body of stainless steel as specified in 3.3.1. The griddle bottom shall be of sheet steel treated to resist corrosion. Griddles shall support a uniformly distributed load of 75 pounds per square foot (34 kg per 0.092 square meters (m²)) on the cooking surface with no evidence of breakage or permanent distortion when tested as specified in 4.4.3. All type III griddles shall be equipped with mounting flange, top support frame with securing clamps, and sealing gasket. Means shall be provided to prevent grease penetration to the underside.

3.5.2 Griddle surface. The griddle surface shall be one piece of cast iron, carbon steel or stainless steel, with a minimum thickness of 7/16 inch (11 mm). The surface shall not be porous, pitted, cracked, or distorted. Size 1, 2, 4, and 5 griddles shall have at least one grease trough extending the full griddle width or the full griddle length. Size 3 and size 6 griddles shall have one grease trough extending the full griddle width. Drain holes shall be at least 3 inches by 1 inch for sizes 1, 2, 4, and 5 griddles. Sizes 3 and 6 griddles shall each have either a single 4-inch by 1-inch drain hole, or two 3-inch by 1-inch drain holes. When specified for shipboard use (see 6.2), griddles shall have grease chutes that lead only from the front grease trough to the spillage drawer, so grease and debris collect in the front of the drawers first.

3.5.3 Grease receptacle. The grease receptacle shall be fabricated from minimum 24-gauge (0.6 mm) stainless steel, carbon steel, or a combination of both. Sizes 1, 2, 4, and 5 griddles shall have at least one grease receptacle with a capacity of 4 quarts (3.78 liters (L)) minimum, and sizes 3 and 6 griddles shall have either one or two grease receptacles, each with a capacity of 4 quarts (3.78 L) minimum, when tested as specified in 4.4.2. Sizes 1, 2, 4 and 5 griddles shall have at least two vertical baffles and sizes 3 and 6 griddles shall have at least four vertical baffles. Grease receptacles designed to retain grease without baffles are acceptable for the type III, size 3 griddle. Grease receptacles shall be rigidly supported, provided with a handle and vertical baffles, and shall be readily removable from the front of the griddle. For Naval shipboard installations, grease receptacles shall be provided with a positive latch to prevent spillage.

3.5.4 Splash guard. The griddle shall have a splash guard around the back and two sides. The splash guard shall be fabricated of minimum 18-gauge stainless steel and shall be at least 3 inches (76 mm) high at the rear and sides with the front corners tapered or rounded. The splash guard sides and back shall be welded with a continuous weld to form a grease-tight seal around the edges of the griddle and splash guard when tested as specified in 4.4.7. A splash guard is not required on type III (dresser top) griddles.

3.5.5 Controls. The temperature of each griddle section shall be controlled by a snap-action adjustable thermostat and separate switch or by a thermostat with an "OFF" position. Each thermostat shall have a white signal light that glows when the heating element is drawing current and goes out when the set temperature is reached (see 4.4.5). A white indicator light shall be located on the front of the griddle and glow when the griddle is energized. Thermostat dials shall have graduations at intervals not greater than 25oF (-3.8oC) with a minimum operating range of 200oF (93oC) to 450oF (232oC). All switches and

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thermostats shall be conveniently located on the front panel, and be either recessed or provided with a protector bar around the knobs to prevent damage to stems and knobs. When specified for shipboard use (see 6.2), the temperature controls shall be arranged horizontally, each corresponding to their respective griddle sections, oriented from left to right. When tested as specified in 4.4.5, the surface temperature on each section shall not vary more than 25oF (-3.8oC) from the thermostat setting except that for those areas adjacent to the splash guards, the surface temperature shall not vary more than 30oF (-1.1oC) from the thermostat setting. No point on the surface of the heating section shall vary more than 30oF (17oC) from any other point.

3.5.6 Heating elements. The griddle shall have heating elements arranged so that different areas of the griddle may be controlled independently. A minimum of one heating element shall be furnished for each linear foot (305 mm) of the griddle plate. The elements shall be the tubular enclosed coil type and shall be securely clamped to the bottom of the griddle plate. Each heating section shall be controlled by a thermostat. The bottom of the heating element shall be enclosed by a heat insulating pad or by a system of heat-reflecting baffles constructed of minimum 24-gauge (0.6 mm) stainless steel or polished cold-rolled sheet steel treated to resist corrosion. Both methods shall be designed to isolate the heating elements by reducing the amount of heat radiated downwards. When an insulating pad is used, it shall be of rock wool or glass fibers and shall be at least 3/4 inch (19 mm) thick and suitable for the temperatures generated in this area. The insulating pad shall be enclosed in a minimum 24-gauge (0.6 mm) steel housing. The housing may be stainless steel or steel treated to resist corrosion. Heating elements shall be readily accessible for repair or replacement. The terminals of the heating elements shall project a sufficient distance to permit easy access to the connections. All internal wiring shall be free of stress or tension and shall be coated with high-heat resistant insulation to resist water or grease.

3.6 Griddle stand-design and construction. Griddle stands for type II griddles shall be of open type design, so constructed that they can be banked together in battery alignment without space between the tops. The stand shall be fabricated from stainless steel specified in 3.3.1. Means shall be included to secure the griddle to the stand to allow removal of the griddle. Stands shall be as specified in 1.2, with plain legs, casted legs or bolt-down legs. Style 2 griddle stands shall be provided with four casters: two casters shall be rigid type and two casters shall be swivel type; or four swivel casters. Two of the swivel type casters shall be provided with brakes. Casters shall conform to type I (rigid) and type II (swivel), class B minimum, wheel diameter 3-inches, style b, mounting optional of FF-C-77. When dragged by a lower leg across a concrete floor, the stand shall support a griddle without dislodgement, breakage, or permanent damage to any part when tested as specified in 4.4.4. Each stand shall support a griddle, with a uniformly distributed load of 200 pounds (91 kilograms (kg)) on the heating surface, without damage to any part of the stand, when tested as specified in 4.4.4.

3.7 Marking. Identification markings shall be permanently marked directly on the item or on an aluminum, brass, or stainless steel plate firmly affixed to the item. Markings shall be stamped, embossed, engraved, or photosensitive. The plate thickness shall be not less than 0.012 inch (0.3 mm).

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3.7.1 Identification plate. Each griddle identification plate shall be marked with the manufacturer's model and serial number, name, trade name, or trademark of such known character as to be readily identifiable with said manufacturer.

3.8 Finish. All stainless steel surface finishes shall comply with NSF Standard 2 and NSF Standard 4. Griddles and stands shall be free from discoloration or stains and smooth on all surfaces and edges.

3.9 Workmanship. All components and assemblies of the griddle and stand, as applicable, shall be free from dirt and other harmful extraneous material, burrs, slivers, rough die, tool and grind marks, dents, and cracks. Castings, molded parts, and stampings, if used, shall be free of sand, fins, pits, blow holes, and sprues. External surfaces shall be free from sharp edges and corners except when corners are required.

3.9.1 Metal fabrication. Metal used in fabrication of the griddle and stand, as applicable, shall provide for original quality surface finish and shall be free from kinks and unspecified bends. Forming and shearing shall not cause damage to the metal and shall be done neatly and accurately. Corners shall be square and true and all bends of major nature shall be made with dies or fixtures to insure uniformity of size and shape.

3.9.2 Welding. The surfaces of parts to be welded shall be free from rust, scale, paint, grease, and other foreign matter. Welds shall be smooth and free from cracks, burn holes, undercuts, or incomplete fusion. All scale and flux shall be removed from the finished weld area.

3.9.3 Fastening devices. Threaded fasteners and rivet holes shall be accurately punched or drilled and shall have burrs removed. Threaded fasteners shall not be broken, cracked, or stripped and shall be torqued. Rivets shall fill the hole completely and the heads shall be in full contact with the surface of the member and concentric with the hole.

3.9.4 Wiring. Wiring shall be enclosed, supported, and adequately protected from food spillage and against mechanical damage. Metal edges with which wire may come in contact shall be smooth and free of sharp edges. When specified for shipboard use (see 6.2), suitable shields or baffles shall be installed to prevent wiring from hanging into any areas where personnel or removeable parts, such as grease drawers, can contact them.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, 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 this document where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Certificate of compliance. When certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Sampling. Unless otherwise specified, sampling and inspection procedures shall be in accordance with MIL-STD-105. All griddles offered for delivery at one time shall be considered a lot for the purpose of inspection.

4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.

4.2.2 In-process testing. Prior to assembly, each griddle plate with welded splash guard shall be tested as specified in 4.4.7. Evidence of any weld crack shall constitute failure of the unit.

4.2.3 End item visual examination. The end item shall be examined for the defects listed in table II. The lot size shall be expressed in units of end items. The sample unit shall be one completely fabricated end item. Guidance for inspection level and Acceptable Quality Level (AQL) is provided in section 6.5.

4.2.4 End item dimensional examination. The end item shall be examined for conformance to dimensions specified in table I and 3.5. Any dimension not as specified shall be classified as a defect. The lot size shall be expressed in units of end items. The sample unit shall be one completely fabricated end item. Guidance for inspection level and an AQL is provided in section 6.5.

4.2.5 End item testing.

4.2.5.1 Representative item testing. One representative end item of the specified type, size, class, and style selected from the lot shall be tested as specified in 4.4.1, 4.4.2, 4.4.6, 4.4.8 and 4.4.9 (when applicable). Any test failure shall be cause for rejection of the lot.

4.2.5.2 Performance testing. The end items shall be tested as specified in 4.4.3, 4.4.4, and 4.4.5. Any test failure shall be recorded as a defect. The lot size shall be expressed in units of end items. The sample unit shall be one end item. Guidance for an inspection level and AQL is provided in section 6.5.

4.2.6 Packaging inspection. The inspection shall be in accordance with the quality assurance provisions of MIL-R-11337.

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TABLE II. End item visual defects.

Examine	Defect	Classification	
		Major	Minor
Finish	Not finished where required	X	
	Type of finish not as specified	X	
	Evidence of discoloration or stains	X	
	Surface and edges not smooth	X	
Construction, design, and workmanship	Part missing	X	
	Any component fractured, buckled, punctured, dented, or malformed	X	
	Any component misplaced, loose, or not in proper alignment	X	
	Component non-accessible for servicing, adjustment, or replacement when required	X	
	Griddle body not enclosed cabinet-type	X	
	Griddle bottom not of sheet steel treated to resist corrosion	X	
Electrical	Griddles not furnished with provisions for permanent electrical connections	X	
	Griddle not grounded	X	
	Baffles or protective shielding of wires not provided	X	
Heating elements	Not securely installed	X	
	Terminals not accessible	X	
	Number of elements not as specified	X	
	Bottom of elements not enclosed as specified	X	
	Not insulated as specified (pad-type)	X	
Controls	Not specified number of switches or thermostats	X	
	Thermostat dials not graduated	X	
	Thermostat dials not recessed or protector bar missing	X	
Griddle surface	Not one piece	X	
	Porous, pitted, cracked, or distorted	X	
Grease trough	Drain not provided	X	
	Grease chutes from front of grease trough not provided (for Naval shipboard installation)	X	
Grease receptacle	Not removable from the front	X	
	Number of baffles not as specified	X	
	Not provided with a positive latch (for Naval shipboard installations only)	X	

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TABLE II. End item visual defects - Continued.

Examine	Defect	Classification	
		Major	Minor
Griddle stand	Not open construction	X	
	Not provided with casters (when applicable)	X	
	Not provided with means to secure griddle to stand	X	
Style 2 casters	Not type specified	X	
	Two swivel type not provided with brakes	X	
Welding (when applicable)	Not free of oxide, scale, paint, or grease	X	
	Not continuous, sound, smooth, or free from porosity, cracks, incomplete fusion, or deformation of material	X	
	Flux (when used) not removed		X
Thread fasteners and rivets	Missing, broken, stripped, or fractured	X	
	Loose		X
	Rivets not fully peened or upset		X
	Rivets head(s) not in full contact with riveted members		X
Marking for identification	Missing, incomplete, not legible, plate not of the specified material		X

4.3 Certificate compliance examination. Certifications, certified test reports or listing marks for standards submitted in accordance with 3.2 shall be examined and validated as proof of compliance. Prior to Government approval of first shipment, the contractor shall submit to the contracting officer or his authorized representative for approval, certification that the griddles and stands he proposes to furnish meet the applicable requirements of UL and NSF as follows:

4.3.1 UL. Acceptable evidence of meeting the applicable requirements of UL 197 shall be a UL listing mark or a certified test report from a recognized independent testing laboratory, acceptable to the Government, indicating that the griddles have been tested and conform to the applicable requirements of UL 197.

4.3.2 NSF. Acceptable evidence of meeting the requirements of NSF Standard 4 for griddles, and NSF Standard 2 for stands shall be one of the following:

- a. A listing in the current edition of the NSF "Food Service Equipment And Related Products, Components And Materials" and display of the NSF seal on the finished griddles and stands, or
- b. A certification for the griddles and stands issued by NSF under their special one-time contract evaluation/certification service, or

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- c. A certified test report, acceptable to the contracting officer with the advice of the Army Surgeon General from an independent testing laboratory indicating that the griddles and stands have been tested and conform to the respective NSF standards.

4.4 Methods of inspection.

4.4.1 Temperature time limit test. The griddle shall be operated in an ambient temperature of 75oF (24oC) +/-5oF (+/-3oC) using electrical characteristics specified in the contract or purchase order. Surface temperatures shall be obtained by use of a recording type temperature indicating device. An observation shall be made to determine that the electrical circuit through the heating elements is interrupted within 12 minutes for all griddles to determine compliance with the time and temperature requirements of 3.4.2. Inability of the griddle to meet the requirements of 3.4.2 shall constitute failure of this test.

4.4.2 Grease receptacle capacity test. The grease receptacle shall be filled to capacity with water. The water in the grease receptacle shall then be poured into a graduated container of known capacity to determine compliance with the capacity requirements of 3.5.3. Inability of the grease receptacle to meet the capacity requirements of 3.5.3 shall constitute failure of this test.

4.4.3 Griddle body test. The cooking surface of the griddle shall be uniformly loaded with 75 pounds per square foot (per 6.45 cm²) for 15 minutes and the griddle body (and legs if applicable) examined to determine compliance with the strength requirements of 3.5.1. Inability of the griddle to meet the strength requirements of 3.5.1 shall constitute failure of this test.

4.4.4 Static and dynamic tests for type II griddles. The type II griddle with a uniformly distributed load of 200 pounds (91 kg) on griddle surface shall be placed on the stand and the stand shall be examined for compliance with the dislodgement, breakage, and permanent damage requirements of 3.6. The 200-pound (91 kg) load, and casters of style 2 models, shall then be removed and the stand with griddle shall be dragged by the lower end of each leg in turn across a level concrete floor for 3 feet (91 centimeters). The stand shall then be examined for compliance with the requirements of 3.6. Inability of the griddle stand to meet the requirements of 3.6 shall constitute failure of this test.

4.4.5 Thermostat test. The griddle shall be connected to the specified power source. The thermostat shall be set at 300oF (149oC) and the griddle allowed to operate until the signal light has cycled "on" and "off" through at least three cycles at this setting. The griddle surface shall then have five temperature readings taken per heating section. The readings shall be taken 4 inches (102 mm) in from each corner and at the center of the heating section (i.e., at the intersection of the diagonals from corner to corner of each heating section). The heating section surface temperature shall be measured at each of the five points by taking the average of the high and low temperatures during a complete cycle at each of those points. This procedure shall be repeated at 325oF (163oC) and 350oF (177oC). Any failure to meet thermostat or signal light requirements of 3.5.5 shall constitute failure of this test.

4.4.6 Incline test (shipboard installation). The grease receptacle shall be 3/4 filled with liquid and hamburger patties shall be placed at the center of

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the cooking surface. The griddle shall be energized and inclined at an angle of 15 degrees each side of the vertical in each of two vertical planes at right angles to each other. Determination shall be made that the griddle operates as intended without spillage of liquid or product as required in 3.4.3. Failure to meet the requirement in 3.4.3 shall constitute failure of the test.

4.4.7 Liquid penetrant weld test. The splash guard welds shall be tested between the griddle edge and the splash guard in accordance with ASTM E 165 for compliance with grease tight seal requirements of 3.5.4. Evidence of any weld crack shall constitute failure of this test.

4.4.8 Shipboard vibration test. When required for shipboard use, the griddle under normal operating conditions, shall be tested in accordance with MIL-STD-167/1, Type I equipment. The griddle shall be secured to the test machine in the same manner that it will be secured on shipboard (see 3.9.3). Failure of the griddle to perform its function during and after testing, or of meeting requirements of 3.4.4 shall constitute failure of this test.

4.4.9 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 (see 6.2.1) that the equipment meets MIL-STD-461 requirements. Nonconformance with the requirements specified shall constitute failure of the test.

4.5 Preparation for delivery inspection. The preservation, packaging, packing and marking of the item shall be inspected to verify conformance to the requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, packing, and marking. Preservation, packaging and packing shall be in accordance with the requirements of MIL-R-11337 with the level of preservation and packaging and the level of packing as specified (see 6.2).

5.2 Marking.

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

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

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Self-heating electric griddles are intended for use in kitchens and shipboard galleys for cooking various foods.

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

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- a. Title, number, and date of this document
- b. Type, size, class and style required (see 1.2 and 3.4)
- c. Issue of document required, if different than as specified (see 2.1.1)
- d. When griddles are required for shipboard installation (see 3.4.3, 3.4.4, 3.4.5, 3.4.6, 3.5.2, 3.5.5, 3.9.4)
- e. Selection of applicable levels of preservation, packaging, packing and marking (see 5.1 and 5.2)

6.2.1 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (DD Form 1423) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 227.405-70 are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.3 Recycled materials. It is encouraged that recycled material be used when practical as long as it meets the requirements of the document (see 3.3).

6.4 Part or identifying number (PIN). The PINs to be used for griddle units acquired to this specification are created as follows:

```

PIN designation ----- M - 2857 - X - X - X - X
                        *   *   *   *   *   *
Inch-Pound Doc. ---*   *   *   *   *   *
Specification No. -----*   *   *   *   *
Type -----*   *   *   *
Style -----*   *   *
Size -----*
Class -----*

```

6.4.1 Cataloging data. For cataloging data purposes, PIN code numbers are assigned to type, style, size and class as follows:

- a. PIN code for type
 - 1 = Type I
 - 2 = Type II
 - 3 = Type III
- b. PIN code for style
 - 1 = Style 1
 - 2 = Style 2
 - 3 = Style 3
- c. PIN code for size
 - 1 = Size 1
 - 2 = Size 2
 - 3 = Size 3
 - 4 = Size 4
 - 5 = Size 5
 - 6 = Size 6

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d. PIN code for class

- 1 = Class 1
- 2 = Class 2
- 3 = Class 3
- 4 = Class 4
- 5 = Class 5
- 6 = Class 6
- 7 = Class 7

6.4.2 Example of PIN. Requirements: stand mounted, with bolt-down legs, nominal 24 inches deep by 24 inches wide, 220 volts, 60 Hz, 3 phase.

PIN designation: ----- M - 2857 - 2353

6.5 Sampling procedures.

6.5.1 Sampling for end item visual examination. Recommended inspection level is II and AQL expressed in terms of defects per hundred units is 2.5 for major defects and 6.5 for total (major and minor combined) defects.

6.5.2 Sampling for end item dimensional examination. Recommended inspection level is S-2 and AQL expressed in terms of defects per hundred units is 6.5.

6.6 Classification cross reference. Classifications used in this specification (see 1.2) are identical to those found in the superseded military specification MIL-G-2338L.

6.7 Supersession data. This specification replaces military specification MIL-G-2338L, dated 24 October 1985.

6.8 Subject term (key word) listing.

Cooking device
Counter top mounted
Dresser mounted
Stand mounted

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MILITARY INTERESTS:

Custodians

Army - GL
Navy - YD1
Air Force - 99

Review Activities

Army - CE, MD
Navy - MC, SA
Air Force - 50, 84
DLA - GS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
VA - OSS

PREPARING ACTIVITY:

Navy - YD1
(Project 7310-0841)