



Standard Specification for Frying and Braising Pans, Tilting Type¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers tilting frying and braising pans (also known as tilting skillets; hereinafter called braising pans) suitable for the preparation of foods by several methods, such as frying, braising, and boiling.

1.2 Braising pans shall be self-contained units with all required operating and safety controls ready for connection to utilities.

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

1.4 This specification may involve hazardous materials, operations, and equipment. *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 limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

[A36/A36M Specification for Carbon Structural Steel](#)

[A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip \(Withdrawn 2014\)³](#)

[A176 Specification for Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip \(Withdrawn 2015\)³](#)

[A240/A240M Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications](#)

[A263 Specification for Stainless Chromium Steel-Clad Plate](#)

[A268/A268M Specification for Seamless and Welded Fer-](#)

[ritic and Martensitic Stainless Steel Tubing for General Service](#)

[A269 Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service](#)

[A276 Specification for Stainless Steel Bars and Shapes](#)

[A568/A568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for](#)

[A635/A635M Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for](#)

[A1011/A1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength](#)

[D3951 Practice for Commercial Packaging](#)

[F760 Specification for Food Service Equipment Manuals](#)

[F1786 Test Method for Performance of Braising Pans](#)

2.2 ANSI Standards:⁴

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

[ANSI Z1.4 Sampling Procedures and Tables for Inspection by Attributes](#)

[ANSI Z21.41 Quick-Disconnect Devices for Use with Gas Fuel Appliances](#)

[ANSI A21.69 Connectors for Moveable Gas Appliances](#)

[ANSI Z83.11 Gas Food Service Equipment](#)

2.3 National Fire Protection Association Standards:⁵

[ANSI/NFPA 54 National Fuel Gas Code](#)

[ANSI Z223/NFPA 70 National Electrical Code](#)

2.4 NSF International Standard:⁶

[NSF/ANSI Standard No. 4 Commercial Cooking, Rethermalization, and Powered Hot Food Holding and Transportation Equipment](#)

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

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

⁵ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

⁶ Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140, <http://www.nsf.org>.

2.5 *Underwriters Laboratories Standard*:⁷

UL/ANSI Standard No. 197 Commercial Electric Cooking Appliances

2.6 *Military Standards*:⁸

MIL-STD-167/1 Mechanical Vibration of Shipboard Equipment (Type 1—Environmental and Type 2—Internally Excited)

MIL-STD-461 Requirements For the Control Of Electromagnetic Interference Characteristics of Subsystems and Equipment

MIL-STD-1399/300 Interface Standard For Shipboard Systems Section 300A Electric Power, Alternating Current

3. Terminology

3.1 *Definitions of Terms Specific to This Standard*:

3.1.1 *braising pan (tilting skillet)*—a device where the cooking energy is stored in a steel plate that is clad with a layer of stainless steel. The clad plate has stainless steel sides to accommodate various food products.

3.1.2 *capacity*—capacity of a braising pan is determined by the volume of water that it is designed to hold during cooking.

4. Classification

4.1 Braising pans covered by this specification are classified by type, grade, class, size, style, and capacity.

4.2 *Type*:

4.2.1 *Type IA*—table or countertop units with rectangular shaped clad plate and pan sides.

4.2.2 *Type IB*—table or countertop units with circularly shaped clad plate and pan sides.

4.2.3 *Type II*—floor mounted pans with an open stand.

4.2.4 *Type III*—floor mounted pans with a cabinet base.

4.2.5 *Type IV*—wall mounted pans.

4.3 *Grade*:

4.3.1 *Grade A*—manual tilting system.

4.3.2 *Grade B*—power tilting system.

4.4 *Class*:

4.4.1 *Class 1*—208 V, 60 Hz, 1 phase.

4.4.2 *Class 2*—208 V, 60 Hz, 3 phase.

4.4.3 *Class 3*—240 V, 60 Hz, 1 phase.

4.4.4 *Class 4*—240 V, 60 Hz, 3 phase.

4.4.5 *Class 5*—480 V, 60 Hz, 1 phase.

4.4.6 *Class 6*—480 V, 60 Hz, 3 phase.

4.4.7 *Class 7*—120 V, 60 Hz, 1 phase.

4.4.8 *Class 8*—220 V, 60 Hz, 3 phase.

4.4.9 *Class 9*—230 V, 50 Hz, 1 phase.

4.4.10 *Class 10*—400 V, 50 Hz, 3 phase.

4.4.11 *Class 11*— 440 V, 60 Hz, 3 phase (marine use).

4.4.12 *Class 12*—No external electric power supply (standing pilot with milli-volt control system).

4.5 *Size*:

4.5.1 *Size a*—less than 500 in.² (3225.8 cm²) of cooking surface.

4.5.2 *Size b*—501 to 750 in.² (3225.9 to 4838.7 cm²) of cooking surface.

4.5.3 *Size c*—751 to 1000 in.² (4838.8 to 6451.6 cm²) of cooking surface.

4.5.4 *Size d*—more than 1000 in.² (6451.7 cm²) inch of cooking surface

4.6 *Style*:

4.6.1 *Style i*—electric heated.

4.6.2 *Style ii*—gas heated.

4.7 *Capacity*:

4.7.1 Maximum 12 gal (45 L) pan.

4.7.2 Maximum 20 gal (76 L) pan.

4.7.3 Maximum 30 gal (114 L) pan.

4.7.4 Maximum 40 gal (152 L) pan.

4.7.5 Greater than 40 gal (152 L) pan.

5. Ordering Information

5.1 Orders for braising pans under this specification shall include the following information:

5.1.1 ASTM specification number and date of issue.

5.1.2 Quantity to be furnished.

5.1.3 Type.

5.1.4 Grade.

5.1.5 Class.

5.1.6 Size.

5.1.7 Style.

5.1.8 Capacity.

5.2 The following options should be reviewed and if any are desired they should be included in the order.

5.2.1 When Federal/Military procurement(s) is involved, refer to the supplement pages.

5.2.2 Type of gas, if applicable: natural, propane, other (specify high heating value of gas in Btu per cubic feet, specific gravity, and composition of gas for other gases).

5.2.3 Electrical power supply connection (except for Class 12 braising pans) and, if applicable, power cord with plug or conduit connection and size.

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

5.2.5 Specify special requirements, such as inspections, accessories, additional nameplate data, anchorable feet, and so forth.

5.2.6 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.

5.2.7 If Type 430 corrosion-resistant steel is not desired

5.2.8 When specified, all control components and exposed electrical wiring shall be resistant to cleaning by a non-pressurizing spray nozzle connected to domestic city water supply.

5.2.9 When specified, a quick-disconnect gas supply, an approved quick disconnect (socket and plug) conforming to

⁷ Available from Underwriters Laboratories Inc., 333 Pfingsten Rd., Northbrook, IL 60062-2096, <http://www.ul.com>.

⁸ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://dodssp.daps.dla.mil>.

ANSI Z21.41, and a flexible connector conforming to ANSI Z21.69 shall be provided with the braising pan.

5.2.10 When specified, additional accessories such as casters, flanged feet, draw-off valve with strainer, faucet, spray nozzle with wand hose assembly, pouring lip strainer, steamer pan holder, or lift off cover (for Type I pans) shall be provided.

6. Materials and Manufacture

6.1 General:

6.1.1 Braising pans shall conform to Specifications **A36/A36M**, **A167**, **A176**, **A240/A240M**, **A263**, **A268/A268M**, **A269**, **A276**, **A568/A568M**, **A635/A635M**, and **A1011/A1011M**, as applicable (see 2.1).

6.1.2 Materials used shall be free from defects, which would affect the performance or maintainability of individual components, or of the overall assembly.

6.1.3 Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice.

6.1.4 Use of used or rebuilt products is not allowed under this specification.

6.2 *Cover*—The cover shall be constructed of Types 300 series corrosion-resistant steel conforming to Specifications **A167** or **A240/A240M**.

6.3 *Pan Interior*—Pan interior shall be constructed of Types 300 series corrosion-resistant steel conforming to Specifications **A167** or **A240/A240M**.

6.4 *Exterior*—Unless otherwise specified, material shall be Types 300 series or 400 series corrosion-resistant stainless steel conforming to Specification **A240/A240M** or to Specifications **A167** or **A176** as applicable, and thickness shall be 20 gage minimum (0.037in. (0.94 mm) U.S. revised standard gage).

6.5 *Hardware and fittings*—Unless otherwise specified, all hardware and fittings shall be corrosion-resistant or suitably processed to resist corrosion in accordance with the manufacturer’s standard practice.

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

7. Design and Construction

7.1 General:

7.1.1 Braising pan shall be delivered assembled and ready for connection to water, or gas piping, and electrical supply, as applicable.

7.1.2 *Pan Section*—The pan section shall have a flat bottom to which various depth side(s) are formed or welded. The top edge of the front wall of the pan section shall have a product-retaining lip to limit spillover. There shall also be a pouring lip or spout on the front wall. The bottom, the side, rear and front walls, and the pouring lip shall be of integral construction.

7.1.3 *Tilting Mechanism*—The tilting mechanism for Type II, III, and IV pans shall provide a means of tilting the full pan section from the normal horizontal operating position to the position in which the contents of the pan will completely drain. The tilting mechanism for Type II, III, and IV pans shall be self-locking with the loaded or empty pan section in any position between level and fully tilted.

7.1.4 Control System:

7.1.4.1 Each braising pan shall have an indicator which shows that the device is energized.

7.1.4.2 Style i pans shall be equipped with electric heaters. The control system shall energize and de-energize the heaters as required by the operation of the temperature control and high limit controls.

7.1.4.3 Style ii pans shall be equipped with gas burners and have a means for automatic ignition of main burner gas. A constant burning pilot, or an electrically ignited pilot or pilotless ignition (direct spark ignition or glow coil), shall be provided for each burner system. The control system shall shut off the gas to all burners, including pilot burners, in the event the means of ignition becomes inoperative. The control system shall turn the burners “on” and “off” as required by the operation of the temperature control and high limit controls.

7.1.4.4 When the pan is tilted more than 10° from the horizontal position, the power supply or gas to the main burners shall be turned off automatically.

7.1.4.5 Each pan shall be equipped with an adjustable thermostat and the range shall include 200° to 400°F (93.3° to 204.4°C). This thermostat shall automatically control the pan cooking surface temperature and must contain an “off” position as an integral part of the thermostat.

7.1.4.6 When specified, each pan shall be equipped with a high temperature limit protection set at a maximum of 460°F (237.77°C) in addition to the adjustable thermostat.

7.1.5 Stands:

7.1.5.1 Stands, bases, and cabinet supports shall be constructed to safely support a pan loaded to capacity during the loading, cooking, and emptying operations.

7.1.5.2 The base for Type IA or Type IB pans shall have provisions for attaching the base to the countertop.

7.1.5.3 Type IV pans shall have a rear support bracket for attachment of the pan to the in-wall carrier. Attachment means shall be accessible.

7.1.5.4 Stands:

(1) Open stands for Type II pans constructed of pipe or tubing shall be not less than 1.5 in. (38.1 mm) in outside diameter and not less than 0.060 in. (1.52 mm) wall thickness.

(2) An open stand constructed of angle iron enclosed with stainless steel panels is acceptable.

(3) The stand shall be furnished with adjustable feet for leveling purposes. Minimum adjustment shall be 1 in. (25.4 mm).

(4) Floor stands shall be stable when the pan is in the raised position or provisions shall be provided to anchor the legs to the floor.

7.1.5.5 Cabinet bases for Type III pans shall be furnished with adjustable feet for leveling purposes. Minimum adjustment shall be 1 in. (25.4 mm). The rear feet shall have provisions for anchoring. Access to the cabinet base shall be provided through a door or panel on the front of the base.

7.1.6 Hinged Covers:

7.1.6.1 A hinged cover may be furnished on Type II, III, and IV pans.

7.1.6.2 The cover shall be counter-balanced, hinged to move independently of the pan section, and hinged to the stationary stand or base.

7.1.6.3 A cover is not required to be furnished on Type IA or IB pans.

7.1.6.4 When specified, a deeper cover that accommodates stacking of food service pans for steaming of product shall be furnished.

8. Performance Requirements

8.1 When specified in the contract or purchase order, performance testing shall be performed and reported in accordance with Test Method F1786.

9. Sampling and Quality Assurance

9.1 *Sampling*—When specified in the contract or purchase order, sampling for inspection should be performed in accordance with ANSI Z1.4.

9.2 The braising pans prepared for shipment shall be measured and inspected by the manufacturer for compliance with this specification.

10. Product Marking

10.1 Each braising pan shall be provided with an identification plate in compliance with UL/ANSI 197, ANSI Z83.14, and NSF/ANSI Standard No. 4.

11. Manuals

11.1 Each pan shall be furnished with an installation and operating instructions manual. Manuals shall comply with Specification F760.

12. Packaging and Package Marking

12.1 The braising pan shall be packaged and packed in accordance with the manufacturer’s standard commercial domestic packaging. The package shall be marked showing the name of the product, model number, serial number, and manufacturer’s name. When specified, packaging shall be in accordance with the requirements of Practice D3951

13. Features

13.1 Typically, features are added to basic models at an additional cost. Any options that are required can be written into the procurement contract as desired.

14. Keywords

14.1 baine marie; boiling; braising; braising pan; frying; fry pan; griddling; reheating; sautéing; simmering; skillet; steaming; thawing; tilting; tilting fry pan; tilting skillet

**SUPPLEMENTARY REQUIREMENTS
FOR
FEDERAL AND MILITARY PROCUREMENT**

The requirements apply only to Federal/Military Procurement, not domestic sales or transfer.

S1.

When specified, frying and braising pans shall be equipped with a minimum 1½-in. (38.1 mm) draw-off located in such a position at the bottom of the pan to permit fluids to be drained without tilting the skillet.

S2.

Where provisions of this supplement conflict with the main body, this supplement shall prevail.

S3. Manual

A manual complying with Specification F760 and supplement shall be provided.

S4. First Article Inspection

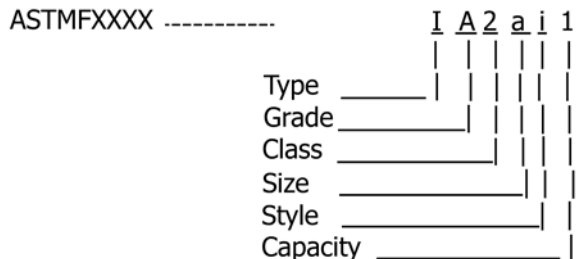
When required, the first article inspection shall be performed on one unit. The first article may be either a first production item or a standard production item from the supplier’s current inventory, provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

S5. Data Nameplate

A nameplate shall contain the following:
(1) National Stock Number (NSN), and
(2) Government approved manual number.

S6. Part Identifying Number

The following part identifying numbering procedure is for government purposes and does not constitute a requirement for the contractor. These classes are the same as those in Section 4. The PINs to be used for items acquired to this ASTM document are as follows:



S7. Preservation, Packaging, and Package Marking

When other than normal commercial practice or conformance to Specification **D3951** is desired, the preservation, packaging, and package marking requirements shall be stated in the purchase order or contract.

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