



# Standard Specification for Food Waste Pulper Without Waterpress Assembly<sup>1</sup>

This standard is issued under the fixed designation F1899; 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.

## 1. Scope

1.1 This specification covers pulper assemblies intended for grinding of food scraps and limited amounts of cardboard, paper, and disposable plastic food service ware.

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 The following safety hazards caveat pertains only to the test method portion, Section 13, of this specification:

1.4 *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:<sup>2</sup>

- A6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
- A29/A29M Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought
- A53/A53M Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- A126 Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
- A240 Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
- A269 Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
- A276 Specification for Stainless Steel Bars and Shapes
- A436 Specification for Austenitic Gray Iron Castings

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.01 on Cleaning and Sanitation Equipment.

Current edition approved Nov. 1, 2014. Published December 2014. Originally approved in 1998. Last previous edition approved in 2014 as F1899 – 14. DOI: 10.1520/F1899-14A.

<sup>2</sup> 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.

- A505 Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements for
- A513 Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
- A519 Specification for Seamless Carbon and Alloy Steel Mechanical Tubing
- A532/A532M Specification for Abrasion-Resistant Cast Irons
- A554 Specification for Welded Stainless Steel Mechanical Tubing
- A582/A582M Specification for Free-Machining Stainless Steel Bars
- A681 Specification for Tool Steels Alloy
- B43 Specification for Seamless Red Brass Pipe, Standard Sizes
- B75 Specification for Seamless Copper Tube
- D2000 Classification System for Rubber Products in Automotive Applications
- D2287 Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds
- D3915 Specification for Rigid Poly(Vinyl Chloride) (PVC) and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications
- D3951 Practice for Commercial Packaging
- E674 Specification for Industrial Perforated Plate and Screens (Round Opening Series)
- F104 Classification System for Nonmetallic Gasket Materials
- F437 Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
- F439 Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
- F441/F441M Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
- F760 Specification for Food Service Equipment Manuals

### 2.2 UL Standards:<sup>3</sup>

- UL 430 Waste Disposers
- UL 508 Industrial Control Equipment

<sup>3</sup> Available from Underwriters Laboratories (UL), 333 Pfingsten Rd., Northbrook, IL 60062.

2.3 *NFPA Standard*:<sup>4</sup>

**NFPA 70 National Electrical Code**

2.4 *ASSE Standard*:<sup>5</sup>

**ASSE Standard 1012 Backflow Preventers With Intermediate Atmospheric Vent**

### 3. Terminology

3.1 *General*—Pulpers are intended for grinding of food scraps and limited amounts of cardboard, paper, and disposable plastic food service wear. Materials are ground in a water filled tank (pulper) to produce a slurry, which is then passed into a disposal system or holding tank. Pulpers are not intended for grinding glass, china, metal, wood, clam, or oyster shell.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *pulper, n*—the pulper tank has a motor driven grinding disk to grind and cut waste material, and mixes this material with water to produce a slurry that is pumped to a disposal system or holding tank through a sizing screen. Pulpers may consist of the following principal parts: tank, motor, grinding disk, particle sizing ring, legs, feed chute, stationary cutters, and rotating cutters.

### 4. Classification

4.1 *General*—Pulper assemblies shall be of the following type, size, and options as specified.

4.2 *Type, Size, and Options*:

4.2.1 *Type A*—Free standing pulper with feed tray assembly and optional flanged feet.

4.2.2 *Type B*—Undercounter pulper for 34-in. (86-cm) high counter, with feed chute and flanged feet.

4.3 All equipment of the same model designation and options on the same purchase order shall have component interchangeability for serviceability.

### 5. Ordering Information

5.1 Purchasers should select the preferred options permitted in this specification and include the following information in procurement documents:

5.1.1 Title, number, and date of publication for this specification.

5.1.2 Classification of size and type.

5.1.3 Electrical power supply voltage range (see 9.1).

5.1.4 Electrical controls when specified to be remote from the unit (see 9.3).

5.1.5 Spare and maintenance parts required.

5.1.6 Designate special features required for installation, such as location of controls.

5.1.7 When naval shipboard use is intended (see Supplemental Requirements).

### 6. Materials

6.1 Unless otherwise specified, pulpers shall be fabricated of materials as specified below. Materials shall be free from

<sup>4</sup> Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

<sup>5</sup> Available from ASSE International, 18927 Hickory Creek Drive, Suite 220, Mokena, Illinois 60448.

defects, which would adversely affect the performance or maintainability of individual components or the overall assembly. The unit shall be manufactured for cleanability.

6.1.1 *Corrosion-Resistant Steel*—shall conform to the requirements of any 200, 300, or 400 series steel specified in Specification **A240**, Specification **A276**, Specification **A554**, and Specification **A582/A582M**.

6.1.2 *Corrosion-Resisting Material*—Corrosion-resisting material is other than corrosion resistant steel that is equivalent in the pulper application.

6.1.3 *Abrasion-Resistant Cast Iron*, shall conform to the requirements specified in Specification **A532/A532M**.

6.1.4 *Austenitic Cast Iron*, shall conform to the requirements specified in Specification **A436**, **A276**.

6.1.5 *Copper Tube*, shall conform to the requirements specified in Specification **B75**.

6.1.6 *Brass Pipe*, shall conform to the requirements specified in Specification **B43**

6.1.7 *Alloy Steel*, shall conform to the requirements specified in Specifications **A6/A6M**, **A29/A29M**, **A505**, **A513**, **A519**, and **A681**.

6.1.8 *Black and Galvanized Pipe*, shall conform to the requirements specified in Specification **A53/A53M**.

6.1.9 *Gaskets and Seals*, shall conform to the requirements specified in Specification **D2287**, and Classifications **D2000** and **F104**.

6.1.10 *Perforated Metal*, shall conform to the requirements specified in Specification **E674**.

6.1.11 *Stainless Steel Pipe*, shall conform to the requirements specified in Specification **A269**.

6.1.12 *Plastic Piping and Fittings*—shall conform to the requirements specified in Specifications **D3915**, **F437**, **F439**, and **F441/F441M**.

6.1.13 *Austenitic Gray Iron Pipe Fittings*—shall conform to the requirements specified in Specification **A126**.

### 7. Design and Construction

7.1 The pulper shall be complete, ready for water, waste, and electrical connections. Undercounter units shall be ready for connection to tabling. Optional remote controls shall be complete and ready for wall mount and interconnection to the pulper. The pulper shall comply with the requirements of UL 430, 508, and Specification **A126**.

7.2 *Valves*—Manual valves, water solenoid or motorized valves, backflow prevention valves or air gaps, and flow regulators shall be of corrosion-resistant materials. Solenoid or motorized valves shall be fully automatic and suitable for 100°F (37.8°C) water.

7.3 *Tanks*—Tanks shall be of corrosion-resistant steel with minimum sheet metal thickness of 0.070 in. (1.78 mm). Any tank frame structure shall be of corrosion-resistant steel with minimum metal thickness of 0.120 in. (3.0 mm).

7.4 *Cutter*—Each pulper shall be supplied with suitable cutters. Cutters shall be of corrosion-resistant material or carbide.

7.5 *Sizing Ring*—Each pulper shall be supplied with a corrosion-resistant steel perforated ring.