



Designation: F 1899 – 98 (Reapproved 2003)

Standard Specification for Food Waste Pulper Without Waterpress Assembly¹

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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 wear.

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

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:*²

A 6/A 6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

A 29/A 29M Specification for Steel Bars, Carbon and Alloy, Hot-Wrought and Cold-Finished, General Requirements for

A 120 Specification for Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless for Ordinary Uses³

A 126 Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings

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

A 269 Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service

A 276 Specification for Stainless Steel Bars and Shapes

A 436 Specification for Austenitic Gray Iron Castings

A 442/A 442M Specification for Pressure Vessel Plates,

Carbon Steel, Improved Transition Properties³

A 505 Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements for

A 513 Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing

A 519 Specification for Seamless Carbon and Alloy Steel Mechanical Tubing

A 532/A 532M Specification for Abrasion-Resistant Cast Irons

A 554 Specification for Welded Stainless Steel Mechanical Tubing

A 582/A 582M Specification for Free-Machining Stainless and Heat-Resisting Steel Bars

A 681 Specification for Tools Steel Alloy

B 43 Specification for Seamless Red Brass Pipe, Standard Sizes

B 75 Specification for Seamless Copper Tube

D 2000 Classification System for Rubber Products in Automotive Applications

D 2287 Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds

D 3915 Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications

D 3951 Practice for Commercial Packaging

E 674 Specification for Industrial Perforated Plate and Screens (Round Opening Series)

F 104 Classification System for Nonmetallic Gasket Materials

F 437 Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80

F 439 Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80

F 441/F 441M Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80

F 443 Specification for Bell-End Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe, Schedule 40³

F 760 Specification for Food Service Equipment Manuals
2.2 *UL Standards:*⁴

UL 430 Waste Disposers

¹ 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.

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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 Withdrawn.

⁴ Available from Underwriters Laboratories (UL), Corporate Progress, 333 Pfingsten Rd., Northbrook, IL 60062.

UL 508 Electrical Industrial Control Equipment

2.3 *NFPA Standard*.⁵

NFPA 70 National Electric Code

2.4 *ASSE Standard*.⁶

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 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

defects, which would adversely effect 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 300 series steel specified in Specification A 167, Specification A 276, Specification A 554, and Specification A 582/A 582M.

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 A 532.

6.1.4 *Austenitic Cast Iron*, shall conform to the requirements specified in Specification A 436.

6.1.5 *Copper Tube*, shall conform to the requirements specified in Specification B 75.

6.1.6 *Brass Pipe*, shall conform to the requirements specified in Specification B 43

6.1.7 *Alloy Steel*, shall conform to the requirements specified in Specifications A 6, A 29, A 505, A 513, A 519, and A 681.

6.1.8 *Black and Galvanized Pipe*, shall conform to the requirements specified in Specification A 120.

6.1.9 *Gaskets and Seals*, shall conform to the requirements specified in Specification D 2287, and Classifications D 2000 and F 104.

6.1.10 *Perforated Metal*, shall conform to the requirements specified in Specification E 674.

6.1.11 *Stainless Steel Pipe*, shall conform to the requirements specified in Specification A 269.

6.1.12 *Plastic Piping and Fittings*—shall conform to the requirements specified in Specifications A 442, D 3915, F 437, F 439, F 441/F 441M, and F 443.

6.1.13 *Austenitic Gray Iron Pipe Fittings*—shall conform to the requirements specified in Specifications A 126.

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 ASSE Standard 1012.

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.

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

7.6 *Pulper Disk*—The disk shall be of corrosion-resistant steel with a minimum thickness of 0.218 in. (5.54 mm), with at least two carbide cutting teeth attached.

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

⁶ Available from The American Society of Safety Engineers (ASSE), 1800 E. Oakton St., Des Plaines, IL 60018.