



Standard Specification for Commercial Food Waste Pulper and Waterpress Assembly¹

This standard is issued under the fixed designation F1150; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification covers commercial pulping and waterpress assemblies intended for grinding of food scraps, paper, cardboard, 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: *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

[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

~~[A167/A240/A240M](#) Specification for Stainless Chromium and Heat-Resisting Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications (Withdrawn 2014)~~

[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

[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 [6df-a150-45b5-86ef-bbffd2cbb69b/astm-f1150-16](#)

[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 (Withdrawn 2015)³

[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

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.

Current edition approved Dec. 1, 2011/Dec. 1, 2016. Published January 2012/January 2017. Originally approved in 1988. Last previous edition approved in 2006/2011 as ~~F1150—06~~ **F1150 – 11**. DOI: ~~10.1520/F1150-11~~ **10.1520/F1150-16**.

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.

- 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
- F442/F442M Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR–PR)
- F443 Specification for Bell-End Chlorinated Poly(Vinyl Chloride) (Cpvc) Pipe Schedule 40 (Withdrawn 1986)³
- 2.2 National Fire Protection Agency Standard:⁴
 - NFPA 70 National Electric Code
- 2.3 NSF International Standards:⁵
 - NSF/ANSI 13 Refuse Processors and Processing Systems
 - NSF Listings–Food Equipment
- 2.4 Underwriters Laboratory Standards:⁶
 - UL 430 Waste Disposers
 - UL 508 Electrical Industrial Control Equipment

3. Terminology

3.1 *General*—Commercial pulpers with waterpresses are intended for grinding food waste, food service paper and cardboard products, food service plastic products, documents including computer printouts, general office and retail store paper, and cardboard waste. Materials are ground in a water-filled tank (pulper) to produce a slurry which is then passed to the waterpress to be de-watered. Pulpers are not intended to be used for grinding glass, china, metal, wood, clam, or oyster shells. Any small pieces of metal inadvertently placed in the pulper, such as cardboard box staples, aluminum refreshment cans, or tin food cans, shall be removable from a trap in the pulper tank.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *pulper*—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 the waterpress through a sizing screen. Pulpers may consist of the following principle parts: tank, motor, grinding disk, particle sizing ring, trash box, legs, feed chute, stationary, and rotating cutters.

3.3 *waterpress*—the waterpress de-waters the slurry generated in the pulper by use of a vertical, inclined, or horizontal screw and perforated screen, then discharges the pulp down a chute to a waste container. Water removed during this process is pumped to the pulper tank in order to conserve fresh water use. Waterpresses may consist of the following parts: shell, helical transport screw, perforated screen, gearbox, motor, compression cone, discharge housing, chute, and pump.

4. Classification

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

4.2 *Type, Size, and Options* (See **Table 1**):

ASTM F1150-16

<https://standards.iteh.ai/catalog/standards/sist/a99576df-a150-45b5-86ef-bbffd2cbb69b/astm-f1150-16>

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

⁵ Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140.

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

TABLE 1 Type, Size, and Options

Options	Type Pulper with Waterpress	A		B	
	Size Pulper Diameter Inches—Maximum	24	30	24	30
	Pulper Motor HP	5	7.5	5	7.5
	Waterpress Motor HP	2	3	2	3
1	Automatic Shutdown Timer	3	3	3	3
2	18 In. Higher than Standard Waterpress	3	3	3	3
3	Tray Flush (Recirculated Water)	3	3	3	3
4	Trough Flush (Recirculated)	2	2	3	3
5	Single Feed Through Connection	2	2	3	3
6	Double Feed Through Connection	2	2	3	3
7	Feed Hood with Tray	4	4	3	3

- (1) Pulper cover plate supplied in lieu of feed hood.
- (2) Pulper and waterpress type not compatible with optional feature.
- (3) Indicates available option for given type pulper with waterpress.
- (4) Standard for Type A.

4.2.1 *Type A*—Free-standing pulper and waterpress assembly with tray assembly and flanged feet.

4.2.2 *Type B*—Undercounter pulper for 34-in. (86-cm) high counter and waterpress with feed hood and bullet 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 this standard.

5.1.2 Classification of size and type (see Section 4).

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 Optional automatic shutdown timer when specified (see Section 4).

5.1.6 Spare and maintenance parts required.

5.1.7 Optional tray flush uses recycled water from the waterpress when specified (see Section 4).

5.1.8 Optional waterpress for high profile pulp discharge 18 in. above standard height optional when specified (see Section 4).

5.1.9 Optional trough flush when specified (see Section 4).

5.1.10 Optional single feed trough connections on when specified (see Section 4).

5.1.11 Optional double feed trough connections when specified (see Section 4).

5.1.12 Optional feed hood with tray for Type B (see Section 4).

5.1.13 Designate special features required for installation, such as location of controls, location of feed-hood and trough openings, waterpress discharge location, and location for cold water and drain connections.

6. Materials

6.1 Unless otherwise specified, pulpers and waterpresses shall be fabricated of materials specified in documents referenced in Section 2. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or the overall assembly. Unit shall be manufactured for cleanability.

6.1.1 *Corrosion-Resistant Steel*—Shall conform to the requirements of any 300 series steel specified in Specifications [A167/A240/A240M](#), [A554](#), [A276](#), and [A582/A582M](#).

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

6.1.3 *Abrasion-Resistant Cast Iron*—Shall conform to the requirements specified in Specification [A532/A532M](#).

6.1.4 *Austenitic Gray Iron*—Shall conform to the requirements specified in Specification [A436](#).

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 [A681](#), [A29/A29M](#), [A6/A6M](#), [A513](#), [A505](#), and [A519](#).

6.1.8 *Black and Galvanized Pipe*—Shall conform to the requirements specified in Specification [A53/A53M](#).

6.1.9 *Gaskets/Seals*—Shall conform to the requirements specified in Specification [D2287](#), Classification [D2000](#), and Classification [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 [F441/F441M](#), [F442/F442M](#), [F443](#), [F437](#), [F439](#), and [D3915](#).

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 and waterpress shall be complete, ready for water, waste, and electrical connection. Undercounter units shall be ready for connection to tabling or trough mounting. Optional remote controls shall be complete and ready for wall mount and interconnection to the equipment. The pulper and waterpress shall comply with the requirements of UL 430 and UL 508.

7.2 *Valves*—Flow valves or fresh water solenoid valves, or both, and backflow prevention valves or air gap shall be of corrosion-resistant materials. Solenoid valves shall be fully automatic and suitable for 100°F (37.8°C) water. Manual flow valves or fresh water valves, or both, when provided, shall be of corrosion-resistant materials. Valves shall be suitable for 100°F (37.8°C) water. Backflow prevention shall be in accordance with NSF/ANSI 13.

7.3 *Tanks*—Tanks shall be of corrosion-resistant steel with minimum sheet metal thickness of 0.070 in. (1.78 mm).

7.4 *Waterpress*—Waterpress enclosure shall be of corrosion-resistant steel with minimum sheet metal wall thickness of 0.070 in. (1.78 mm). Any waterpress frame structure shall be of corrosion-resistant steel or painted carbon steel. Frame material shall