



**Summary of Substantive Changes
between the 2006 and the 2020 edition of
ASSE 1008 “Performance Requirements for
Plumbing Aspects of Residential Food Waste Disposer Units”**

Presented to the IAPMO Standards Review Committee on May 17, 2021

General: The changes to this standard may have an impact on currently listed products. The significant changes are:

- Clarified requirements for having a means for self cleaning, mechanical shock protection and backflow protection in case of blockage in the discharge connection occurs (see Section 1.2.1)
- Revised requirements for test samples to one device for each specimen (see Section 2.1)
- Added a thermal cycling and conditioning test (see Section 3.1)
- Added figure 2 for clarification of dishwasher discharge test (see Figure 2)

Section 1.0, General: Clarified requirements for having a means for self cleaning, mechanical shock protection and backflow protection in case of blockage in the discharge connection occurs as follows:

1.1 Application

This standard applies to the plumbing aspects of residential food waste disposers (herein referred to as the “devices”) intended primarily for installation in the residential kitchen sink outlet, ~~which~~ When supplied with water from the sink supply faucet, these devices discharge into the sanitary drainage system.

1.2 Scope

1.2.1 Description

These devices shall be designed to reduce food waste ~~intended for human or animal consumption to~~ particle sizes for discharging into the sanitary drainage system. Devices shall include a means of self-cleaning and means to protect against mechanical shock. When a dishwasher discharge connection(s) is incorporated in the device, the device shall be designed so that if the discharge connection becomes blocked, backflow into the dishwasher shall not occur.

~~1.2.1.1 Self-Cleaning Feature~~

~~The device shall be designed in such a manner that the interior surfaces are flushed after each use with no residue remaining.~~

~~1.2.1.2 Mechanical Shock Protection~~

~~The device shall be designed in such a manner that the starting and impact torque is cushioned and any resultant movement causes no leakage.~~

~~1.2.1.3 Discharge, Flooding Consideration~~

~~Dishwasher discharge connection(s), when incorporated in the device, shall be designed in such a manner as to allow a rise of water of no more than 1.0 inch (25.4 mm) in a vertical sight tube attached to the dishwasher discharge connection when tested in accordance with Section 3.5.~~

~~The device shall be designed so that if the discharge connection becomes blocked, backflow into the dishwasher shall not occur.~~

1.2.2 Size-Range Connections

The device shall be designed for the installation for which it is intended. The terminal outlet of the device shall be 1.5 in (40 mm) nominal tube size.



1.2.3 ~~Retaining Feature~~ Electrical Requirements

~~The device shall not permit food waste particles 0.5 inches (12.7 mm) or larger to pass beyond the cutting blades. Product shall comply with the appropriate requirements of UL 430 or CSA C22.2 No. 68.~~

1.2.4 ~~Flow Range~~ Mounting Means

~~The device shall operate at a minimum of 3.0 GPM (0.18 L/m) at a head not exceeding 10.0 inches (254.0 mm) of water column. A durable, cleanable, leakproof mounting to the sink shall be provided with the device.~~

1.2.5 ~~Food Waste Particles Size~~ Feed Hopper Closure/Splash Guard

~~The device shall grind the food waste to a maximum size of 0.25 inches (6.4 mm) prior to disposing it into the sanitary drainage system include a means to minimize the ejection of food waste through the feed opening.~~

Section 2.0, Test Specimens: Revised requirements for test samples to one device for each specimen as follows:

2.1 ~~Samples Submitted for Test~~

~~Tests shall be performed in the order listed on one (1) device of each test specimen submitted.~~

~~Three (3) devices of each type or model and size shall be submitted by the manufacturer.~~

2.2 ~~Samples Tested~~

~~The testing agency shall select one (1) of each type or model and size for the full test. Tests shall be performed in the order listed on one (1) device of each size submitted.~~

2.3 ~~Drawings~~

~~Assembly and installation drawings and other data which are needed to enable the testing agency to determine compliance with this standard shall accompany devices when submitted for examination and performance testing under this standard.~~

2.4 ~~Rejection~~

~~Failure of one (1) device shall result in a rejection of that type or model and size.~~

Section 3.0, Performance Requirements and Compliance Testing: Added a thermal cycling and conditioning test as follows:

3.0 ~~Performance Requirements and Compliance Testing~~

~~Conduct all **running** tests with the motor of the device operating at a constant voltage(s) input as rated by the manufacturer and as noted on the nameplate of the device.~~

3.1 Thermal Cycling and Conditioning

3.1.1 Purpose

~~The purpose of this test is to evaluate whether the device is capable of handling hot water temperatures in application, as well as conditioning the device before performing the tests in this standard.~~

3.1.2 Procedure

- ~~1) Install the device per the manufacturer's installation instructions and Figure 1. Test shall be made with the device attached to a sink compartment having a measurement of 13.5 x 16 x 7 in (343 x 406 x 178 mm) deep. Tolerance on dimensions of sink compartment is ± 1 in (± 25.4 mm). Note that overflow rim may be at higher elevation in field installation of food waste disposer unit.~~
- ~~2) Flow water into the sink compartment at a rate of 2.0 ± 0.2 GPM (7.6 ± 0.8 L/min) and temperature of 180 ± 3 °F (82 ± 2 °C) for 1.5 min.~~
- ~~3) Immediately change the temperature of the water flow to 70 ± 3 °F (21 ± 2 °C) and flow for 1.5 min.~~
- ~~4) Repeat sections 3.1.2.(2) and 3.1.2.(3) for an additional six (6) cycles.~~



Section 3.2, Dishwasher Discharge Test: Revised language for clarification as follows:

3.1.3.2 Dishwasher Discharge Test

3.1.13.2.1 Purpose

The purpose of this test is to ascertain ~~that whether~~ the discharge connection(s) is capable of ~~removing a specific~~ maintaining the flow rate ~~when subjected to a~~ greater than and equal to the expected specified head pressure.

3.1.23.2.2 Procedure

~~With the device mounted as in Figure 1, the dishwasher discharge connection shall be capable of discharging not less than 6.0 GPM (0.36 L/s) at a head of 10.0 inches (254.0 mm) of water measured above the dishwasher discharge connection(s) center line.~~

- 1) Connect the device to the test fixture per Figure 2. Note: Do not include adapter accessories offered for direct connection to a dishwasher drain line as they are exempt from this test.
- 2) Increase water flow at water tank inlet to 6.0 GPM (22.7 L/min)
- 3) Continue to flow water until the height of water in the water tank is not changing.
- 4) Measure the water height in the water tank.

3.1.33.2.3 Criteria

~~Failure to discharge at the volume and head stated shall result in a rejection of the device.~~

The height of water in the tank shall not exceed 10 in (254 mm) when measured from the centerline of the water tank outlet. No water shall exit the overflow outlet.

3.2.3.3 Particle Size Retention

3.3.1 Purpose

The purpose of this test is to ~~determine that~~ verify the device's ~~will not allow~~ ability to retain particles larger than 0.5 in (12.7 mm) in diameter ~~to pass and prevent them from passing~~ beyond the ~~cutting blade grinding~~ cutting blade grinding area.

3.2.23.3.2 Procedure

With the device mounted as in Figure 1, place six (6) 0.5 ± 0.02 in (12.7 ± 0.5 mm) balls of steel, or comparable material, in the hopper of the device. Manually agitate the device for a period of 5 minutes. Do not energize or operate per the manufacturer's instructions. Inspect the hopper to determine if any material passed beyond the ~~cutting blade grinding~~ cutting blade grinding area.

3.2.33.3.3 Criteria

~~Failure to retain all of the test material above the cutting blade area shall result in a rejection of the device.~~ All of the test material shall be retained above the grinding area.

3.3.3.4 Load Test

3.3.13.4.1 Purpose

The purpose of this test is to determine the dry weight of ground product retained after grinding, flushing, and drip drying.

3.3.23.4.2 Procedure

The test load shall consist of 0.25 lb (113.4 g) steer rib bones, 1 - 2 in (25.4 - 50.8 mm) long that have been boiled in water for 1 hr, and then baked for 1 hr, plus 0.25 lb (113.4 g) each of fresh raw carrots, celery, and head lettuce.

- 3.3.2.11) With the device mounted as in Figure 1, feed the test load into the device, mixed or at random, and supply the device with water at a rate of 2.0 GPM (7.57 L/min) +/- 0.2 gpm (0.8 L/min) at a maximum water temperature of 80.0 °F (26.7 °C).



3.3.2.22) The mixture of water and food waste shall flow from the device into the sanitary drainage system when discharged through a P-trap and 5 ft (1.5 m) of **1.5 inches (38.1 mm) nominal ID pipe NPS 1.5 (DN 40)** pipe with a **0.25 inch/foot) pitch 2% slope**.

3.3.2.33) All discharge from the device, except those fibers which lodge on the sieve crossbars, shall pass through a 0.5 in (15 mm) sieve per **(U.S. Standard Sieve) ASTM E11**.

3.3.2.44) Retain the ground discharge product on a 0.25 in (6.4 mm) sieve per **(U.S. Standard Sieve) ASTM E11**.

3.3.2.55) Wash the retained ground discharge product with a water spray from a spray head having sixteen (16) 0.05 in (1.3 mm) holes and a flow rate of 2.5 GPM **(1.8 L/s 9.46 L/min) +/- 0.2 gpm (0.8 L/min)**. The spray head shall be held 12.0 inches (304.8 mm) above the sieve and continuously moved with a circular motion for 15 seconds. The angle of the spray streams shall be at 90° to the sieve.

3.3.2.66) Allow the ground discharge product to drip dry **in the sieve** after washing **for a minimum of 2 hr in ambient conditions**.

3.3.3.4.3 Criteria

An **The** amount of ground product retained on the sieve **exceeding shall not exceed** 1.0 oz (28 g) **shall result in a rejection of the device**.

3.5.3.6 Flooding Tests

3.5.1.3.6.1 Purpose

3.5.1.13.6.1.1 With Dishwasher Connection

The purpose of this test is to determine whether **back flooding water flows back** into the dishwasher **occurs** when the device discharge connection is blocked.

3.5.1.23.6.1.2 Without Dishwasher Connection

The purpose of this test is to determine whether **back flooding water flows back** above the sink flange **occurs** when the device discharge connection is partially blocked or undersized.

3.5.2 3.6.2 Procedure

3.5.2.13.6.2.1 For disposers equipped with a dishwasher discharge connection(s) refer to Figure 1:

- 1) **Install the device per Figure 1.**
- 2) Attach a vertical, **transparent** sight tube to the dishwasher discharge connection.
- 3) **Remove the P-trap and** ~~C~~close or obstruct the drain outlet of the device.
- 4) With the fill opening of the device in a normal operating condition, flood the hopper and fill the sink with water to a depth of 3.0 inches (76.2 mm) above the sink mounting flange. (In batch feed type, stopper must be in position and open.)
- 5) Operate the device continuously for a 3-minute period and observe the water level in the sight tube for any rise in water level.
- 6) If device motor is reversible, tests shall be made with motor operating in each direction.

3.5.2.23.6.2.2 For devices not equipped with dishwasher discharge connections proceed as follows:

- 1) **Equip Assemble** the non-loaded, non-operating device with any drain fitting(s) normally provided by the manufacturer.
- 2) Remove **or render ineffective** ~~disable~~ the sink stopper and splash guard.
- 3) Introduce water at a rate of 7.5 GPM **(4.5 L/s 28.4 L/min) +/- 0.5 gpm (2 L/min)** directly into the hopper through the sink mounting flange for a 3-minute period and observe the water level in the hopper for any rise of water level above the sink mounting flange.



~~3.5.3~~ 3.6.3 Criteria

~~3.5.3.11)~~ For devices having dishwasher connection(s), *any the* water level *shall not* rise more than 1.0 in (25.4 mm) above the water level in the sink *shall result in a rejection of the device*.

~~3.5.3.22)~~ For devices without dishwasher connection(s), *any the* water level *shall not* rise above the sink mounting flange *shall result in a rejection of the device*.

~~3.6.3.7~~ Mechanical Shock Protection Test

~~3.6.13.7.1~~ Purpose

The purpose of this test is to determine that the starting impact torque is cushioned and does not cause any leakage.

~~3.6.23.7.2~~ Procedure

1) With the device mounted as in Figure 1, close or obstruct the drain outlet, flood the hopper, and fill the sink with water to a depth of 3.0 in (76.2 mm) */- 0.25 inches (0.6 mm)* above the sink flange.

2) Operate the device through 2500 cycles of 5 seconds on and 5 seconds off. Observe the sink mounting flange for any evidence of leakage during and after the cycle testing.

~~3.6.33.7.3~~ 3.7.3 Criteria

Any There shall be no evidence of leakage during or after the cycle testing *shall result in a rejection of the device*.

Section 4.0, Detailed Requirements: Revised language for clarification purposes as follows:

~~4.24.1~~ Installation and Maintenance Instructions

Complete instructions for installation shall be packaged with the device. Drawings or schematic sketches that would be useful to the installer shall be part of these instructions. These instructions shall provide all information necessary for correct installation.

~~4.2.1~~ Mounting Means

A durable, cleanable, leakproof mounting to the sink shall be provided with the device.

~~4.2.2~~ Feed Hopper Closure/Splash Guard

The device shall include a means to minimize the ejection of food waste through the feed opening.

~~4.3~~ Maintenance Instructions

Complete instructions shall be furnished for field maintenance.

~~4.14.2~~ Identification and Markings

Each device shall have the following information marked on it:

- a) *Name of the manufacturer or trademark; and*
- b) *Type and model number of the device*

The markings on the device shall be either etched, cast, molded, stamped, or engraved on the body of the device, on a label compliant with UL 969 for permanence, or on a corrosion resistant plate securely attached to the device with a corrosion resistant means in a location visible after installation.

Section 5.0, Definitions: Revised language for clarification purposes and added a definition for mechanical shock as follows:

Definitions in the standard shall take precedence over any other publication. Definitions not ~~shown located are found~~ in this section are located in the Plumbing Dictionary, ~~(Fifth Sixth Edition)~~, published by ASSE International.



Dishwasher Discharge Connection

An opening to permit the discharge from the domestic kitchen dishwasher to be drained into a ~~grinder~~ food waste disposer hopper.

Hopper

1. Entry part of a food waste disposer; ~~household or commercial~~. 2. The space or cavity within a food waste grinder for receiving and containing food waste prior to and during the reduction process.

Mechanical Shock

A near instantaneous application of a force or torque.

Figure 1 was revised.

Figure 2 was added