

WaterSense[®] Specification for Flushing Urinals

1.0 Scope and Objective

This specification establishes the criteria for a flushing urinal under the U.S. Environmental Protection Agency's (EPA's) WaterSense[®] program. It is applicable to:

- Urinal fixtures that receive liquid waste and use water to convey the waste through a trap seal into a gravity drainage system.
- Pressurized flushing devices that deliver water to urinal fixtures.
- Flush tank (gravity type) flushing devices that deliver water to urinal fixtures.

The specification is designed to ensure both sustainable, efficient water use and a high level of user satisfaction with flushing performance.

2.0 Summary of Criteria

Urinal fixtures and flushing devices must meet criteria in the following areas, as applicable:

- The average maximum water consumption must not exceed 0.5 gallons per flush (gpf) (1.9 liters per flush [Lpf]), as specified in Section 3.0.
- The urinal fixture must conform to the requirements specified in Section 4.0.
- The urinal flushing device must conform to the applicable requirements specified in Section 5.0.

3.0 Water-Efficiency Criteria

- 3.1 The average maximum water consumption shall be tested in accordance with the following ANSI standards as applicable: ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, or IAPMO Z124.9¹, and shall meet the following criteria:

- 3.1.1 The manufacturer shall specify a maximum flush volume (rated flush volume) of the flushing device or urinal fixture, which must be equal to or less than 0.5 gpf (1.9 Lpf).
- 3.1.2 The average maximum flush volume, determined through testing, shall not exceed the value specified in Section 3.1.1.

¹ References to these and other ASME, IAPMO, and ASSE ANSI standards apply to the most current version of those standards. For definitions of these acronyms see Section 9.0.

4.0 Urinal Fixture Requirements

- 4.1 Ceramic urinal fixtures must conform to ASME A112.19.2/CSA B45.1 requirements when tested with a flushing device with the same rated flush volume that meets the requirements of Sections 3.0 and 5.0 of this specification.
- 4.2 Stainless steel urinal fixtures must conform to ASME A112.19.3/CSA B45.4 requirements when tested with a flushing device with the same rated flush volume that meets the requirements of Sections 3.0 and 5.0 of this specification.
- 4.3 Plastic urinal fixtures must conform to IAPMO Z124.9 requirements when tested with a flushing device with the same rated flush volume that meets the requirements of Sections 3.0 and 5.0 of this specification.

5.0 Flushing Device Requirements

5.1 Pressurized Flushing Devices

- 5.1.1 The pressurized flushing device must conform to ASSE #1037.
- 5.1.2 The pressurized flushing device must not exceed the rated flush volume of water specified in Section 3.1.1 even if the primary actuator is maintained in the flush position (i.e., device's primary actuator must be a non-hold-open design).
- 5.1.3 The pressurized flushing device must not contain a flush volume adjustment that allows the flush volume to vary more than ± 0.1 gpf (± 0.4 Lpf) from the pressurized flushing device's rated flush volume specified in Section 3.1.1.² The pressurized flushing device must not be packaged, marked, or provided with instructions directing the user to an alternative flush volume setting that would override the rated flush volume specified in Section 3.1.1.
- 5.1.4 The manufacturer must attest that the pressurized flushing device is designed such that replaceable or maintainable parts (e.g., pistons or diaphragms) are not intended to be interchangeable with parts that would cause the device to exceed the rated flush volume specified in Section 3.1.1.

5.2 Flush Tank (Gravity Type) Flushing Devices

- 5.2.1 The flush tank (gravity type) flushing device must conform to ASME A112.19.2/CSA B45.1.

² A control stop that supplies water to a flushometer valve is not considered a flush volume adjustment.

- 5.2.2 The flush tank (gravity type) flushing device must not exceed the rated flush volume of water specified in Section 3.1.1, even if the primary actuator is maintained in the flush position (i.e., the device's primary actuator must be a non-hold open design).
- 5.2.3 The average maximum volume of water that may be discharged by the tank, when field adjustment of the tank trim is set at its maximum water use setting, must not vary more than ± 0.1 gpf (± 0.4 Lpf) from the rated flush volume specified in Section 3.1.1. The flush tank (gravity type) flushing device must not be packaged, marked, or provided with instructions directing the user to an alternative flush volume setting that would override the rated flush volume specified in Section 3.1.1.
- 5.2.4 The manufacturer must attest that the flushing device is designed such that replaceable or maintainable parts are not intended to be interchangeable with parts that would cause the device to exceed the rated flush volume specified in Section 3.1.1.

6.0 Marking

- 6.1 The urinal fixture and flushing device product and product packaging must be marked with the rated flush volume in gpf and Lpf as specified by the manufacturer in Section 3.1.1, verified through testing and in compliance with this specification.
- 6.2 Marking must be in gpf and Lpf in at least two digit resolutions (e.g., 0.5 gpf [1.9 Lpf]).

7.0 Effective Date

This specification is effective on August 14, 2009.

8.0 Future Specification Revisions

EPA reserves the right to revise this specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. Revisions to the specification would be made following discussions with industry partners and other interested stakeholders.

9.0 Definitions

Definitions within ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, IAPMO Z124.9, and ASSE #1037 are included by reference.

ANSI – American National Standards Institute

ASME – American Society of Mechanical Engineers

ASSE – American Society of Sanitary Engineering

CSA – Canadian Standards Association

IAPMO – International Association of Plumbing and Mechanical Officials

Complete system – Any combination flushing device and urinal fixture that have both been certified for the same rated flush volume and that when used together meet the requirements of this specification for water efficiency and performance.

Flushing device – Device employed in the operation of a urinal to deliver water into the urinal fixture. Includes pressurized flushing devices and flush tanks (gravity type), as defined in ASME A112.19.2/CSA B45.1.

Rated flush volume – The maximum flush volume, as specified by the manufacturer, verified through testing and in compliance with this specification.

Appendix A: Informative Annex for WaterSense Labeling

The following requirements must be met for products to earn the WaterSense label.

1.0 WaterSense Partnership

The manufacturer³ of the product must have a signed partnership agreement in place with EPA. In accordance with this specification, the product can be considered as either a flushing device, urinal fixture, or the complete system.

2.0 Conformity Assessment

Conformance to this specification must be certified by a body accredited in accordance with the WaterSense product certification system.

3.0 Independent Labeling of Urinal Fixtures and Flushing Devices

Certified urinal fixtures and flushing devices may be labeled together as a complete system or separately as a urinal fixture or flushing device. If labeled separately, the manufacturer of each part should clearly indicate on product documentation that the part should be used with a WaterSense labeled counterpart that has the same rated flush volume in order to ensure that the complete system meets the requirements of this specification for water efficiency and performance.

4.0 Product Sampling for Certification

In selecting products for certification, at a minimum the manufacturer shall provide three samples of the model to be tested. At least one of the samples shall be chosen at random and tested to the requirements contained in this specification.

³ Manufacturer, as defined in the WaterSense program guidelines, means: "Any organization that produces a product for market that might be eligible to meet WaterSense criteria for efficiency and performance. Manufacturers may also produce 'private label' products that are sold under the brand name of a separate organization, which is treated as a separate partner/application from the original product manufacturer." In the case of private labeling, the private labeling organization that ultimately brands the product for sale must have a signed WaterSense partnership agreement in place with EPA.