



WaterSense® Specification for Tank-Type Toilets

Version 1.2

June 2, 2014

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1.0 Scope and Objective

This specification establishes the criteria for a tank-type high-efficiency toilet under the U.S. Environmental Protection Agency's (EPA's) WaterSense program. It is applicable to:

- Single-flush, tank-type gravity toilets
- Dual-flush, tank-type gravity toilets
- Dual-flush, tank-type flushometer tank (pressure-assist) toilets
- Tank-type, flushometer tank (pressure-assist) toilets
- Tank-type electrohydraulic toilets
- Any other tank-type technologies that meet these performance specifications

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

2.0 General Requirements

- 2.1 The toilet shall conform to applicable water closet requirements in ASME A112.19.2/CSA B45.1,¹ except as otherwise indicated in this specification.
- 2.2 If the toilet has dual-flush capabilities, it shall conform to requirements in ASME A112.19.14.

3.0 Water Efficiency Criteria

- 3.1 Single-flush toilets: The effective flush volume shall not exceed 1.28 gallons (4.8 liters) when evaluated in accordance with the sampling plan contained in 10 CFR 429.30. For single-flush toilets, the effective flush volume is the average flush volume when tested in accordance with ASME A112.19.2/CSA B45.1.
- 3.2 Dual-flush toilets: The effective flush volume shall not exceed 1.28 gallons (4.8 liters) when evaluated in accordance with the sampling plan contained in 10 CFR 429.30. For dual-flush toilets, the effective flush volume is the average flush volume of two reduced flushes and one full flush. Flush volumes shall be tested in accordance with ASME A112.19.2/CSA B45.1 and ASME A112.19.14.
- 3.3 Samples with average flush volume in excess of 0.10 gallon (0.4 liter) greater than their rated flush volume shall be deemed to fail testing requirements due to excessive flush volume.²

¹ References to this and other standards apply to the most current version of that standard.

² For example, fixtures rated at 1.28 gallons per flush (the maximum flush volume) but flushing at greater than 1.38 gallons (5.2 liter) when adjusted in accordance with the water consumption test procedure in ASME A112.19.2/CSA B45.1 shall be deemed to have "failed" the requirements of this specification.

- 3.4 Samples with average flush volumes less than or equal to 0.10 gallon (0.4 liter) greater than their rated flush volume shall be adjusted, if possible, to their rated flush volume prior to performance testing.
- 3.5 Samples with average flush volumes less than their rated flush volume shall be tested at measured volume and this volume shall be recorded on the test report.

4.0 Flush Performance Criteria

- 4.1 Toilet model performance is identified as either a “pass” or “fail” depending upon whether it can successfully and completely clear all test media from the fixture in a single flush in at least four of five attempts. Flush performance testing shall be conducted in accordance with the waste extraction test protocol provided in ASME A112.19.2/CSA B45.1.

5.0 Product Marking

- 5.1 Toilet fixtures shall be marked in accordance with requirements in ASME A112.19.2/CSA B45.1 with the exception identified in Section 5.1.1 below.
 - 5.1.1 Toilet bowls intended to be used with tanks of varying consumption levels (e.g., 1.6 and 1.28 gallons per flush) shall be marked with a dual consumption marking or a consumption range, as indicated in ASME A112.19.2/CSA B45.1; however, toilet bowls shall not be marked with the words “or less” to indicate compatibility with tanks of varying consumption levels.
- 5.2 Toilet tanks shall not be packaged, marked, nor provided with instructions directing the user to an alternative water use setting that would override the rated flush volume, as established by this specification. Any instruction related to the maintenance of the product shall direct the user on how to return the product to its rated flush volume.

6.0 Effective Date

This specification is effective on June 2, 2014.

7.0 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.

8.0 Definitions

Definitions within ASME A112.19.2/CSA B45.1 and ASME A112.19.14 are included by reference.

- **Pressure-assist toilet:** A water closet that uses a flushometer tank as a flushing device, 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: Requirements for WaterSense Labeling

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

1.0 WaterSense Partnership

The manufacturer³ of the product must have a signed partnership agreement in place with EPA.

2.0 Conformity Assessment

Conformance to this specification must be certified by an EPA licensed certifying body accredited for this specification in accordance with the *WaterSense Product Certification System*.

3.0 Clarifications

3.1 Adjustability

Toilet tanks with adjustable water use settings that can be identified and activated by a user or plumbing professional to override the rated flush volume, as established by this specification, do not comply with the intent of this specification or the WaterSense program and do not qualify for use of the WaterSense label.

3.2 Tanks and Bowls Manufactured and Sold by Different Companies

WaterSense requires every combination tank and bowl to be tested and certified for conformance to this specification in order to ensure that the toilet as a whole provides the expected water efficiency and performance. Wall-hung bowls and in-wall carrier systems manufactured and sold by different companies can earn the WaterSense label, provided that the combination unit is tested and certified. However, since these products might not necessarily be sold as a unit, WaterSense has established some additional certification requirements that these products must meet in order to earn the WaterSense label. Both manufacturers must agree to have their products tested and certified together in order for the tank and bowl combination to receive the WaterSense label.

Certification Listing

In order to control the use of the WaterSense label, EPA is requiring each manufacturer (e.g., the tank manufacturer and the bowl manufacturer) to obtain a certification listing with one of EPA's licensed certifying bodies to show that the toilet, formed by the combination tank and bowl, was certified for conformance to the specification. The listings must identify both components, along with the respective manufacturers' names,

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 can 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.

brand names, model names, and model numbers by which the products are identified and sold. Separate listings will allow the licensed certifying body to directly authorize each manufacturer to use the WaterSense label on their tanks or bowls. Note that though a certification listing is required for each manufacturer, WaterSense is not requiring the combination toilet to be tested more than once. The licensed certifying body must ensure that the listing information is complete prior to issuing the certification and the WaterSense label to either manufacturer.

As an alternative to separate listings, and at the discretion of the licensed certifying body, the manufacturer of one of the components (e.g., either the tank or bowl manufacturer) can become listed as an additional company under the certification listing of the manufacturer of the corresponding component (e.g., the bowl or tank). However, both components, along with the respective manufacturer's names, brand names, model names, and model numbers by which the products are identified and sold, must be identified under both the certification file owner's listing and the additional company's listing. This will ensure that there is no confusion about which products were certified in combination to earn the WaterSense label.

3.3 *Product Packaging Marking and Labeling*

Though every combination tank and bowl must be tested and certified for conformance to this specification in order to ensure that the toilet as a whole provides the expected water efficiency and performance, in some cases the tank and bowl might be packaged individually and/or sold separately. To ensure that it is clear to the purchaser that a particular combination tank and bowl is labeled, EPA is providing clarification regarding how the packaging must be marked and how the WaterSense label must be used. These marking and labeling requirements apply to tanks and bowls made by the same company and those made by different companies, as is the case for some wall-hung bowls and in-wall carrier systems.

Manufacturers must adhere to the following product packaging marking and labeling requirements for toilet tanks and bowls packaged and sold individually:

- In all cases, the toilet tank and toilet bowl packaging must bear the WaterSense label.
- Toilet bowl packaging must indicate all of the specific brand names, model names, and model numbers, as applicable, of the counterpart tanks it can be used with to form a WaterSense labeled tank-type toilet. For example, the toilet bowl packaging might say:

“This [insert description of bowl] is WaterSense labeled when used with [list brand names, model names, and model numbers, as applicable, of the tank(s) that the bowl can be used with to form a WaterSense labeled tank-type toilet].”

- Product specification sheets or other product documentation for both the toilet tank and bowl must indicate all of the specific brand names, model names, and model numbers, as applicable, of the counterpart products (e.g., the bowl or tank) that the product can be used with to form a WaterSense labeled tank-type toilet.

Note that for toilet tanks and bowls packaged and sold together as a unit, the packaging must bear the WaterSense label.