

Summary of Revisions to the WaterSense® Specification for Tank-Type Toilets Version 1.2

The U.S. Environmental Protection Agency's (EPA's) WaterSense program is announcing the release of Version 1.2 of its *WaterSense Specification for Tank-Type Toilets* (specification). The purpose of this document is to summarize the revisions made to the specification, share the reasoning for the changes, and provide a timeline for compliance with the new requirements.

It is important to note that EPA considers the revisions made in Version 1.2 of the specification to be minor in nature. The revisions are meant to provide clarification of the existing requirements and do not materially affect the scope, performance, or efficiency requirements. The revisions also do not affect the status of existing certified, WaterSense labeled tank-type toilets.

Background

WaterSense released its initial *Tank-Type High-Efficiency Toilet Specification* in January 2007 and issued the first revision to the specification in May 2011. Since that time, the American Society of Mechanical Engineers (ASME) and Canadian Standards Association (CSA) have revised ASME A112.19.2/CSA B45.1 *Ceramic Plumbing Fixtures* to include the waste media extraction test, fill valve integrity test, and tank trim adjustability test protocols established in the *WaterSense Specification for Tank-Type Toilets*. To align with the revised ASME A112.19.2/CSA B45.1 standard, to the extent possible, WaterSense is issuing Version 1.2 of the specification. The changes to the specification, described in this document, will ensure consistency and reduce redundancy in toilet testing for manufacturers seeking the WaterSense label. WaterSense has also taken this opportunity to make some additional minor revisions to the specification to align it with the other WaterSense product specifications. All of the revisions contained in Version 1.2 will ensure that tank-type toilets receiving the WaterSense label are certified and labeled consistently, in accordance with EPA's intent, and will continue to meet consumer expectations for efficiency and performance.

Section 2.0 General Requirements

EPA has revised the title of the section from "Summary of Criteria" to "General Requirements." This change does not affect the specification's original scope of objective, but rather aligns the organization of the specification with other WaterSense product specifications.

Similarly, to align with other WaterSense product specifications, EPA has revised the content of Section 2.0 to provide the general and overarching requirements that products must meet to earn the WaterSense label, rather than a summary of the specification requirements. This section now indicates that all tank-type toilets shall conform to the applicable water closet requirements in ASME A112.19.2/CSA B45.1, and all dual-flush tank-type toilets must conform to applicable requirements within ASME A112.19.14 *Six-Liter Water Closets Equipped With a*

Dual Flushing Device. This change now more fully and clearly aligns the specification with the requirements of the guiding national standards for tank-type toilets.

Section 3.0 Water Efficiency Criteria

Flush Volume Measurement Requirements

The majority of the fixture performance testing protocol, originally provided in Appendix A of the specification, is included in the recent revisions to the ASME A112.19.2/CSA B45.1 standard. The fixture performance testing protocol is now incorporated by reference in Section 2.0 of the specification. However, the ASME/CSA standard does not address the average flush volume limits that dictate whether a toilet is deemed to pass or fail the flush volume test or whether the flush volume should be adjusted to complete the test. As a result, WaterSense has retained these requirements in the specification. As discussed below, Appendix A was removed from the specification because a majority of the requirements are now redundant with the A112.19.2/CSA B45.1 standard; therefore, WaterSense moved these flush volume limit requirements to *Section 3.0 Water Efficiency Criteria*. This change does not affect the specification's original requirements or intent.

Section 4.0 Flush Performance Criteria

Testing Protocol Reference

In Version 1.1 of the specification, the fixture performance testing protocol was identified in Appendix A. Since the protocol is now included in the recent revisions to the ASME A112.19.2/CSA B45.1 standard, WaterSense has updated *Section 4.0 Flush Performance Criteria* to reference compliance with the standard rather than Appendix A (Appendix A has been subsequently deleted). In addition, under Version 1.1, this section summarized the test media requirements. It also stipulated that the protocol was only applicable to single-flush toilets and to the full flush option of dual-flush toilets. These requirements are also covered in the referenced standards and, therefore, WaterSense removed them from this section to minimize redundancy.

In addition, in the development of the revised ASME A112.19.2/CSA B45.1 standard, there was consensus that the casing used for the test media did not materially affect the results of the test. Either cased or uncased media were deemed acceptable for performance testing. In view of this decision and because of the desire for the WaterSense specification to be consistent with the standard, EPA has determined that performance testing using cased or uncased media is acceptable under this specification. This allowance is included by reference to the standard.

Section 5.0 Supplementary Requirements for Flush Volume Adjustability (Version 1.1)

Section Removal

In Version 1.1 of the specification, *Section 5.0 Supplementary Requirements for Flush Volume Adjustability* included testing protocols intended to limit the flush volume adjustability of certified tank-type toilets. These testing protocols included the fill valve integrity test protocol (Appendix B of Version 1.1 of the specification) and the tank trim adjustability testing protocol (Appendix C of Version 1.1 of the specification). These testing protocols were adopted by the ASME A112.19.2/CSA B45.1 standard, which is now incorporated by reference in Section 2.0 of the specification. Therefore, WaterSense removed these requirements from the specification to minimize redundancy. This change does not affect the specification's original requirements or intent.

Section 5.0 Product Marking

Tank Marking Requirements

Toilet tank marking requirements identified in ASME A112.19.5 *Flush valves and spuds for water closets, urinals, and tanks* (referenced in Version 1.1 of the specification) require manufacturers to permanently mark or label the tank with information pertaining to the appropriate flush valve replacement parts. These requirements have subsequently been incorporated into ASME A112.19.2/CSA B45.1. Therefore, WaterSense updated the specification to reference compliance with the toilet fixture marking requirements identified in the ASME A112.19.2/CSA B45.1 standard.

Bowl Marking

Version 1.1 of the specification allowed toilet bowls to be marked in a manner that indicated compatibility with flush volumes below 1.6 gallons per flush (gpf). This requirement was intended to alleviate confusion because many manufacturers were marking their toilet bowls with a 1.6 gpf flush volume despite compatibility and certification with tanks that flush at lower volumes (e.g., 1.28 gpf). The revisions to ASME A112.19.2/CSA B45.1 now include provisions clarifying the marking requirements for bowls that are compatible with lower (or varying) flush volumes. Specifically, the standard allows toilet bowls to be marked using the words "or less," a dual consumption marking, or a consumption range.

WaterSense is incorporating by reference the bowl marking requirements from the ASME/CSA standard, which will provide clarity on the appropriate ways to mark bowls that are compatible with a range of flush volumes. However, WaterSense is taking exception to the allowance for the use of the words "or less." Placing a marking on the bowl that identifies a maximum flush volume along with the words "or less" could imply that the bowl is compatible with tanks of any flush volume, potentially below the minimum the flush volumes with which the bowl was certified to perform.

Section 8.0 Definitions

Referenced Standards

WaterSense has removed the reference to ASME A112.19.5, as the marking requirements have been incorporated into ASME A112.19.2/CSA B45.1.

Definitions

WaterSense has removed the definition of an electrohydraulic toilet because it is incorporated by reference in ASME A112.19.2/CSA B45.1.

WaterSense has revised the definition of a pressure-assist toilet to use language consistent with definitions included in ASME A112.19.2/CSA B45.1.

WaterSense has revised the definition of rated flush volume to be consistent with the definition included in other WaterSense product specifications. The new definition clarifies that the rated flush volume is specified by the manufacturer and verified through testing to ensure compliance with the specification.

Appendix A: Fixture Performance Testing Protocol (Version 1.1)

Section Removal

As mentioned previously, a majority of the fixture performance testing protocol, originally provided in Appendix A of Version 1.1 of the specification, is now incorporated by reference in the ASME A112.19.2/CSA B45.1 standard. One exception is the flush volume measurement limits that dictate whether the toilet passes, fails, or should be readjusted for testing. To reduce redundancy with the standard, WaterSense has subsequently moved these requirements to Section 3.0 and has removed the entirety of Appendix A from the specification. This change does not affect the specification's original requirements or intent.

Appendix B: Fill Valve Integrity Test Protocol (Version 1.1)

Section Removal

As mentioned previously, the fill valve integrity test protocol, originally provided in Appendix B of Version 1.1 of the specification, is now incorporated by reference in the ASME A112.19.2/CSA B45.1 standard. To reduce redundancy with the standard, WaterSense has subsequently removed the entirety of Appendix B from the specification. This change does not affect the specification's original requirements or intent.

Appendix C: Tank Trim Adjustability Testing Protocol (Version 1.1)

Section Removal

As mentioned previously, the tank trim adjustability testing protocol, originally provided in Appendix C of Version 1.1 of the specification, is now incorporated by reference in the ASME A112.19.2/CSA B45.1 standard. To reduce redundancy with the standard, WaterSense has

subsequently removed the entirety of Appendix C from the specification. This change does not affect the specification's original requirements or intent.

Appendix A: Requirements for WaterSense Labeling

Section 3.3 Product Packaging Marking and Labeling

Section 3.3 of Appendix A provides additional product packaging marking and labeling requirements for toilet tanks and bowls that are packaged and sold individually. Version 1.1 prohibited the WaterSense label on toilet bowl packaging that indicated compatibility with flush volumes greater than the rated flush volume identified in this specification. WaterSense developed that requirement to prevent confusion about whether a bowl with an advertised flush volume higher than the maximum allowed by the specification was actually labeled.

The new bowl marking requirements identified in ASME A112.19.2/CSA B45.1, and now incorporated by reference in the specification, should eliminate this confusion as toilet bowls can be marked with a dual consumption marking or a consumption range to indicate compatibility with multiple flush volumes. Therefore, EPA is now requiring the toilet tank and bowl packaging, in all cases, to bear the WaterSense label.

Timeline for Compliance with Version 1.2 of the Specification

Version 1.2 of this specification goes into effect June 2, 2014. EPA is providing manufacturers with a six-month grace period to begin complying with the new requirements. By December 2, 2014 all certification activities must be completed in accordance with Version 1.2 of this specification, in order for tank-type toilets to earn the WaterSense label. The existing licensing agreements between EPA and the licensed certifying body will remain in full force and effect.