



Comments on the December 2014 WaterSense[®]
Draft Specification for Flushometer-Valve Water
Closets

April 23, 2015

Table of Contents

Sandra Cannon, U.S. Department of Energy Sustainable Acquisition Program.....	3
Doug Broad, Unaffiliated	4
Maribel Campos, ICC Evaluation Service, LLC	5
Jun Batoon, Hocheng Philippines Corporation	6
Thomas Schumann, ecoBETA U.S.A	7
Peter Langes, Sewer Smart.....	8
David Schwartzkopf, Willoughby Industries	9
Matt Sigler, Plumbing Manufacturers International.....	16
Shabbir Rawalpindiwala & Thomas Kramer, Kohler Company.....	24
John Bertrand, Moen Incorporated	30
Shirley Dewi, International Association of Plumbing and Mechanical Officials Research and Testing (IAPMO R&T)	31
Daniel Gleiberman, Sloan Valve Company.....	32
Peter DeMarco, The IAPMO Group	62
John Watson, Elkay.....	68
Daniel Gleiberman, Sloan Valve Company.....	71
Dave Bracciano, Tampa Bay Water.....	78

Commenter: Sandra Cannon

Affiliation: U.S. Department of Energy Sustainable Acquisition Program

Comment Date: December 19, 2014

Email Text:

Dear WaterSense Team

We know you are aware of this but just want to confirm that all components of the proposed WaterSense flushometer-valve toilet standard will meet commercial code required in states with the strictest standards. Federal agencies in those states will be required to meet the code in their state as well as being required to purchase WaterSense labeled products. They would appreciate not having a conflict.

Appreciate your consideration---Sandra

Sandra Cannon, Technical Support
U.S. Department of Energy Sustainable Acquisition Program
Tel. 509-529-1535

Avoid Waste, Purchase \$mart - EcoPurchasing

Commenter: Doug Broad
Affiliation: Unaffiliated
Comment Date: December 20, 2014

Email Text:

Sirs:

The language of the standard contains reference standards to other publications which are not freely available. ASME A112.19.2, for example, costs \$110 to obtain. It is, in my opinion, inappropriate to hide requirements of Federal law inside publications written by private organizations that must be purchased. Therefore, it is imperative that either the referenced publications be made freely available or the language should be changed from a reference standard to an inclusive standard where all specifications are part of the law itself.

This draft standard is not alone in this deficiency. Most building codes and federal regulations contain reference standards that must be purchased. The net effect of this is that most stakeholders are completely ignorant of everything in the laws other than the specific requirements that are freely available. In this case, that means what is unreferenced, such as the maximum flush rate. Every other referenced requirement is opaque to most readers, except those with extremely deep pockets.

Regards,

Doug Broad
D. C. Broad, Jr. Architect
109 Bramblebush Ct
Rocky Mount, NC 27804
252-937-4691

Commenter: Maribel Campos
Affiliation: ICC Evaluation Service, LLC
Comment Date: January 15, 2015

Email Text:

Hi Robbie,

When looking at the draft online, I noticed that you are referencing IAPMO/ANSI Z124.4 for plastic plumbing fixtures. This standard was discontinued when CSA harmonized the B45.5 standard with all the Z124 plastic fixture standards. Please update your document to correctly referenced that standard as CSA B45.5/IAPMO Z124. The current version is 2011.

Thanks.

Sincerely,

Maribel Campos
Director of Standards, ICC-ES PMG

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Commenter: Jun Batoon
Affiliation: Hocheng Philippines Corporation
Comment Date: January 21, 2015

Email Text:

In the FVtoilet factsheet i noticed the phrase "WaterSense labeled models must pass additional tests, such as the ability to flush a toilet seat cover." I think this is an unintentional error that needs to be corrected since there is no toilet that can flush a seat and cover. Thanks

Commenter: Thomas Schumann
Affiliation: ecoBETA U.S.A
Comment Date: February 6, 2015

Email Text:

Dear Ladies & Gentlemen,
dear Mrs. McCarthy,

it is time for EPA WaterSense to seriously consider a Draft WaterSense Specification for Component Water Conservation Devices- Toilet Valve.

With >40 million U.S. households living below the poverty line and/or depending on government programs, an affordable water conservation device such as a proven toilet valve (<http://www.ecobeta.com/usa>) for \$25.00 makes not only economical and environmental, but water sense.

Why replacing costly toilets when a simple component at a fraction of a toilet cost fixes leaking and conserves water and money?

[Thomas Schumann](#)

Commenter: Peter Langes
Affiliation: Sewer Smart
Comment Date: February 7, 2015 and February 12, 2015

Email Text (February 7, 2015):

There are no national plumbing codes or OSHA regulation requiring that the public be alerted when and where a sewer back up overflow has occurred. Hundreds of gallons of potable water is wasted in the clean up of sewer backup overflows. Increased response time can effectively save water and reduce damage to the eco system and community health.

-----Flushometers are cost effective and sanitary

Oct thru Apr is the rain season and sewers back up more frequently and there is surface water contamination the same months for Cold and Flu.

Email Text (February 12, 2015):

The one thing I am concerned with is maintaining volume to the Flushometers that require 3/4" inlet per fixture. The line pressure is 45psi min. Some buildings will require increasing pipe size for using flushometers. Water less Urinals are not selling good. plumbers don't like those fixture because of contamination.

Plumbers are not trained for exposure to biohazards from bodily fluids in drain systems and should be 29 cfr 1019 1030 (b)

Commenter: David Schwartzkopf
Affiliation: Willoughby Industries, Inc.
Comment Date: February 26, 2015

Email Text:

In the January 15, 2015 webinar, I said that I would provide you with feedback concerning the two families of flushometer toilets being split apart in the current draft specification. Please find comments on that topic attached to this email. Note that we are small-to-medium sized plumbing manufacturer, and well over 90% of all toilets that we manufacture are blow-out type. We supply stainless steel plumbing fixtures to the correctional market.

I also have other thoughts about other elements of the proposed specification. I will attempt to respond further on those other items at a later time if time permits. However, since I committed to this one in the webinar, I wanted to make sure I provided it. Thankfully, the deadline for comments was extended to accommodate my slowness. □

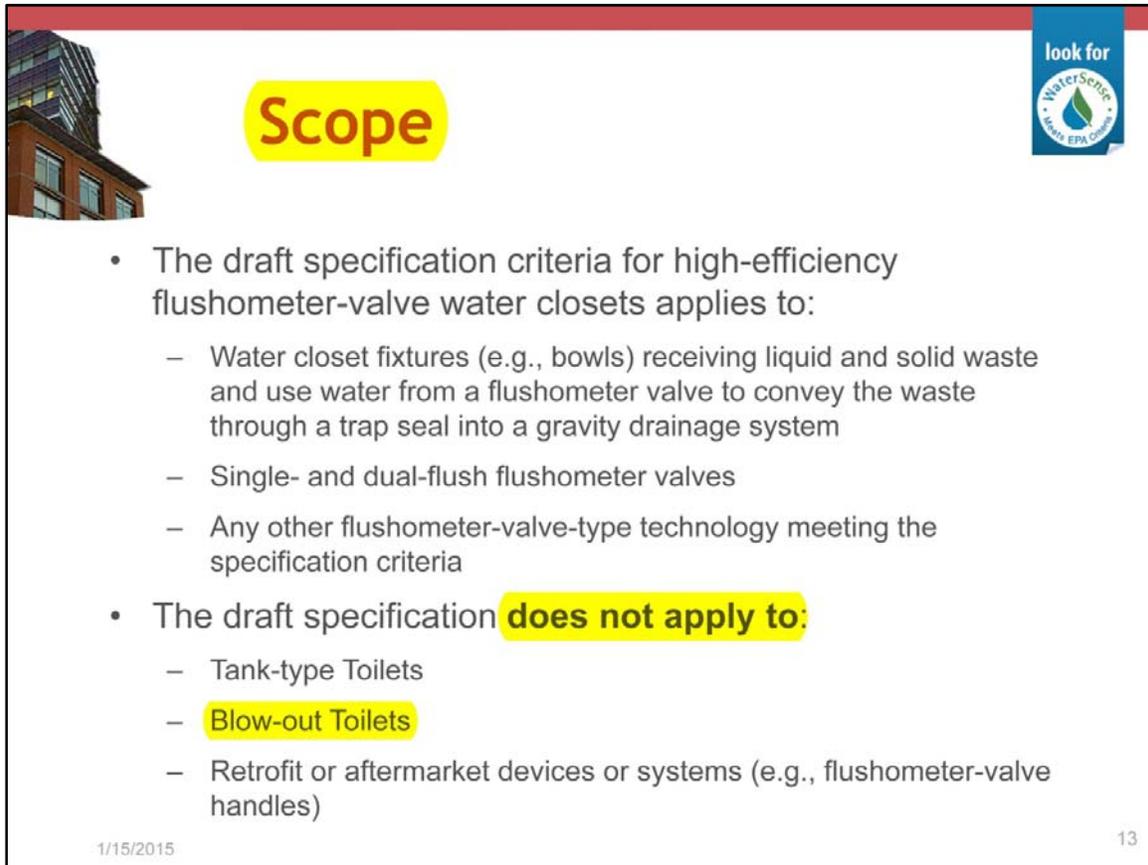
Thanks for hosting the webinar. It was my first opportunity to know of them and to arrange participation.

David Schwartzkopf
Engineering Manager
Willoughby Industries, Inc.
5105 W. 78th Street
Indianapolis, IN 46268
Phone 317-875-0830

Email Attachment:

Topic: Application Scope of Standard for “Flushometer Valve Toilets”

Comment: The standard indicated that it is for “flushometer valve toilets.” However, in the webinar, it was revealed that blow-out toilets that are also “flushometer valve toilets” will be excluded from the standard. (Slide from webinar is shown below.)



Scope

- The draft specification criteria for high-efficiency flushometer-valve water closets applies to:
 - Water closet fixtures (e.g., bowls) receiving liquid and solid waste and use water from a flushometer valve to convey the waste through a trap seal into a gravity drainage system
 - Single- and dual-flush flushometer valves
 - Any other flushometer-valve-type technology meeting the specification criteria
- The draft specification **does not apply to:**
 - Tank-type Toilets
 - **Blow-out Toilets**
 - Retrofit or aftermarket devices or systems (e.g., flushometer-valve handles)

1/15/2015 13

During the webinar, when the query what made as to where the exclusion of blow-out flushometer toilets was indicated in the specification, no one could find it. It is not there. The word “blow” is nowhere used in the current draft of the standard, and it was only used once in the presentation slides of the Jan. 15, 2015 webinar.

Rationale:

Industry standards to date have made no such distinction except in specifying a different minimum operating pressure at which the performance tests specified in the standard will be conducted.

ASME A112.19.2-2013/CSA B45.1-13

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Table 5
Static test pressures for water closets, kPa (psi)
(See Clauses 7.1.1 to 7.1.4, 7.4.3, 7.4.5, and 9.6.2.)

Test sequence (Note 1)	Clause	Test	Gravity flush tank, electro-hydraulic, and flushometer tank water closets	Flushometer valve water closets	
				Siphonic bowl	Blowout bowl
1	7.2	Trap seal depth determination	140 (20)	240 (35)	310 (45)
2	7.3	Trap seal restoration	140 (20)	240 (35)	310 (45)
3	7.4	Water consumption	550 (80), 350 (50), and 140 (20)	550 (80) and 240 (35)	550 (80) and 310 (45)
4	7.5	Granule and ball	140 (20)	240 (35)	310 (45)
5	7.6	Surface wash	140 (20)	240 (35)	310 (45)
6	7.7	Mixed media	140 (20)	240 (35)	310 (45)
7	7.8	Drain line transport characterization	140 (20)	240 (35)	310 (45)
8	7.9	Overflow for gravity tanks	550 (80)	—	—
9	7.10	Waste extraction test	350 (50)	350 (50)	350 (50)
10	7.11	Consistent water level	140 (20), 410 (60), and 550 (80)	—	—
11	7.12	Fill Valve shut off integrity	140 (20), and 550 (80)	—	—
12	7.13*	Adjustability test with original equipment	140 (20), and 550 (80)	—	—
13	7.14*	Adjustability test with after-market seals	140 (20), and 550 (80)	—	—

July 2013 Update

Note: Highlighting and color lines added for clarity.

The current EPA WaterSense® track of producing two separate performance standards for the same high-efficiency toilet consumption category is a bifurcation of current standing industry performance standards. In addition, the current track of excluding blow-out toilets from any WaterSense® performance standards will have the effect of creating not only two separate categories in the high-efficiency toilet market, but will actually make three categories of toilets.

From One to Three Performance Standards Categories

Flushing Technology	Max. HET GPF	Performance Requirements	
		Before EPA WaterSense®	After EPA WaterSense®
Tank-type toilets	1.28	AMSE A112.19.2/ CSA B45.1	WaterSense® Specification for Tank- Type Toilets
Blow out flushometer toilets			N/A¹
Siphonic flushometer toilets			WaterSenses® Specification for Flushometer-Valve Water Closets

¹. No WaterSense® standard will be available; and therefore, no WaterSense® certification will be possible. ASME/CSA harmonized standard will still apply. It is uncertain how the industry standard-making bodies will respond to the gap created. They will likely move to incorporate the new WaterSense® flushometer water closet standard as they did with the earlier WaterSense® standard for tank-type toilets .

This three-way segregation that includes two separate performance standards and sidelines another category with no option of joining its counterparts in the WaterSense® tent of products is very troubling to a manufacturer that manufacturers primarily specialty toilets and toilets that are nearly all blow-out type.

Market preference will be given to toilet technologies that are WaterSense® certified. LEED v4 already requires use of WaterSense® fixtures if they are available as a prerequisite to any level of LEED certification. Manufacturers that currently make nearly exclusively blow-out toilets would be placed in a very awkward situation and possibly even an untenable one if excluded from the market category being defined by the WaterSense® program.

Additionally, the “voluntary” status of WaterSense® requirements should be considered carefully. Any new WaterSense® standards can be expected to be given the weight of law. They already have.

Excerpt 1 of 2 from “Georgia State Amendments to the International Plumbing Code”

**CHAPTER 3
GENERAL REGULATIONS**

**SECTION 301
GENERAL**

*Add new Section 301.1.1 ‘Requirements for high efficiency plumbing fixtures’ as follows:

301.1.1 Requirements for high efficiency plumbing fixtures. The installation of high efficiency plumbing fixtures shall be required in all new construction.
(Effective July 1, 2012)

<http://www.dca.state.ga.us/development/constructioncodes/programs/document>

High-efficiency plumbing fixtures are WaterSense® certified fixture by definition.

Excerpt 2 of 2 from “Georgia State Amendments to the International Plumbing Code”

**Revise the International Plumbing Code, 2006 Edition, as follows:*

**CHAPTER 2
DEFINITIONS**

**SECTION 202
GENERAL DEFINITIONS**

*Add new definition of ‘High Efficiency Plumbing Fixtures and Fittings’ to read as follows:

HIGH EFFICIENCY PLUMBING FIXTURES AND FITTINGS.

Dual flush water closet. A dual flush water closet or toilet that the average flush volume of two reduced flushes and one full flush does not exceed 1.28 gallons and is listed to the WaterSense Tank-Type High Efficiency Toilet Specification.

Kitchen faucet or kitchen faucet replacement aerator. A kitchen faucet or kitchen faucet replacement aerator that allows a flow of no more than 2.0 gallons of water per minute.

Lavatory faucet or lavatory faucet replacement aerator. A lavatory faucet or lavatory faucet replacement aerator that allows a flow of no more than 1.5 gallons per minute at a pressure of 60 pounds per square inch and is listed to the WaterSense High Efficiency Lavatory Faucet Specification.

Nonwater urinal. A urinal that is designed to receive and convey only liquid waste through a trap seal into the gravity drainage system without the use of water for such function.

Single flush water closet. A single flush water closet or toilet, including gravity, pressure assisted, and electro-hydraulic tank types, that the average flush volume does not exceed 1.28 gallons and is listed to the WaterSense Tank-Type High Efficiency Toilet Specification.

Shower head. A shower head that allows a flow of no more than the average of 2.5 gallons of water per minute at 60 pounds per square inch of pressure.

Urinal. A urinal and associated flush valve that uses no more than 0.5 gallons of water per flush and is listed to the WaterSense Specification for Flushing Urinals.

(Effective July 1, 2012)

*Add new definition of ‘Lavatory Faucet’ to read as follows:

LAVATORY FAUCET. A faucet that discharges into a lavatory basin in a domestic or commercial installation.

(Effective July 1, 2012)

The planned move to exclude one family of “flushometer valve toilets” from the WaterSense® specification for “flushometer valve toilets” will at a minimum be confusing and at maximum will inadvertently select winners and losers in the market place based purely on a past choice driven by market demand to develop a slightly different in technology.

Suggested Change (or Language):

Three possibilities (in order of preference based on my input):

1. Place all toilets under the same standard as the ASME A112.19.2/CSA B45.1 (The way it is today. See my comments under a separate topic of “Extending WaterSense® Performance Requirements BEYOND Existing and Well-established Industry Plumbing Standards.”)
2. Place the blow-out toilets under the same specification as the gravity tank toilets.
3. Treat both versions of flushometer water closets (siphon and blow-jet) the same.

Commenter: Matt Sigler
Affiliation: Plumbing Manufacturers International (PMI)
Comment Date: March 4, 2015

Email Text:

To Whom It May Concern:

Attached are PMI's comments in regards to the EPA WaterSense Draft Specification for Flushometer-Valve Water Closets. Please do not hesitate in contacting me if you have any questions.

Regards,

Matt Sigler
Technical Director
Plumbing Manufacturers International
Cell: 847-217-7212
Email: msigler@safep plumbing.org
www.safep plumbing.org

Email Attachment:

See pages 17 through 23.



March 4, 2015

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RE: EPA WATERSENSE DRAFT SPECIFICATION FOR FLUSHOMETER-VALVE WATER CLOSETS

Dear EPA Office of Water:

Plumbing Manufacturers International (PMI) appreciates this opportunity to provide comments to the U.S. Environmental Protection Agency (EPA) regarding the *WaterSense Draft Specification for Flushometer-Valve Water Closets*. PMI is the international, U.S.-based trade association representing 90% of U. S. plumbing products sold in the United States. It has made the promotion of water safety and efficiency a top priority and has included it in its mission statement¹. PMI's members are industry leaders in producing safe, reliable and innovative water efficient plumbing technologies and have supported the WaterSense program since its inception. In addition, PMI and its member companies are longstanding partners in EPA's WaterSense program.

The EPA held a teleconference and webinar on January 15, 2015, to discuss the proposed draft specification. During the event, the need for this specification was not made clear. It should be pointed out that requests have been made to the EPA at several ASME/CSA standards development meetings for proof that the current consensus standards do not already provide water efficiency requirements for flushometer-valve water closets that are comparable to what is being proposed in the draft specification. Furthermore, evidence has been requested in regards to failures with flushometer-valve water closets in the marketplace. As of the date of this letter, EPA has not provided a response to either of the requests of the standard development committees.

If the EPA chooses to continue with the development of the proposed specification, PMI believes the following issues should be resolved before publication:

Topic: The installation of high-efficiency plumbing fixtures and fittings in older commercial structures.

Comment: PMI believes that a statement should be added to the specification that provides guidance to building owners, managers, or designers to have a qualified engineer determine if their specific structure can accommodate the installation of high-efficiency plumbing fixtures and fittings.

Rationale: In WaterSense's supporting documentation it is noted that 28 percent of existing flushometer- valve water closets that are installed in commercial structures have flush volumes that exceed the current federal standards. Even though most newer commercial structures will not have any issues with 1.28 gpf water closets, there are those structures with aging sanitary drainage systems that could prove to be a maintenance nightmare, and therefore be a risk to public health/safety. PMI

¹PMI's Mission: To promote the water efficiency, health, safety, quality and environmental sustainability of plumbing products while maximizing consumer choice and value in a fair and open marketplace. To provide a forum for the exchange of information and industry education. To represent openly the members' interests and advocate for sound environmental and public health policies in the regulatory/legislative processes. To enhance the plumbing industry's growth and expansion.

believes it is in the EPA's best interest to include the proposed statement to protect the WaterSense brand.

Suggested Change/Action: The following text should be added to the draft specification factsheet and other applicable documents on the website:

"For renovations and/or retrofits where the use of high-efficiency plumbing fixtures and fittings are being considered, the structure should first be assessed by a qualified plumbing engineer to determine if the sanitary system can accommodate such fixtures and fittings."

Topic: EPA has stated that based on the results of PERC I, drainline blockages are not of significant concern at 1.28 gpf.

Comment: EPA should be cautious in basing their entire rationale for a maximum 1.28 gpf on PERC I. PERC I began the conversation on "How low can we go?" PERC I did not conclude that all plumbing systems can operate safely at 1.28 gpf, but instead cautioned against basing any decisions on the results. The fact is that PERC has only begun to identify the impact of low flow fixtures and fittings in the building environment and their impact on drainline carry.

Rationale: Though the PERC TC did make a recommendation to the EPA to expand their WaterSense program to include commercial, flushometer-valve toilets, they also made a recommendation for the EPA to carefully review and consider the results of PERC II as well².

Suggested Change/Action: The proposed specification should not be finalized until after the results of PERC II have been documented and reviewed by the EPA and plumbing industry.

Topic: In Section 1.0, the term "*flushometer-valve-type technologies*" is not defined.

Comment: This term is not clear to the end user, and therefore further clarification is necessary in order for proper application and enforcement.

Rationale: The proposed text will assist the end user in not misinterpreting the scope of the draft specification.

Suggested Change/Action: Revise the text of Section 1.0 as follows:

"Any other technology that serves the function of a flushometer-valve, falls within the scope of ASSE 1037/ASME A112.1037/CSA B125.37, and which meet these performance specifications." ~~*"Any other flushometer-valve-type technologies that meet these performance specifications."*~~

Topic: In Section 2.0 (Water Efficiency Criteria), there is not a minimum threshold for water consumption.

Comment: Throughout the plumbing industry, it has been acknowledged that an "unknown yet to be determined" minimum threshold exists where health/safety and performance would be negatively impacted. In fact, it was indicated by the PERC TC that flush volumes between 1.28 gpf and 0.8 gpf need to be further evaluated to better understand drainline performance². Therefore, PMI strongly recommends that the specification contain a minimum flush volume requirement.

Rationale: The PERC I study showed how flush volumes of 0.8 gpf resulted in chaotic and highly inconsistent drainline transport results. This is a red flag that drainline efficacy is at risk using such low flush volumes. We recommend that the specification call for a minimum flush volume requirement of no less than 1.0 gpf for all flush levels, including the reduced flush on dual flush models. Creating an incentive to design and market water closets or flushometer valves that flush less than 1.0 gpf severely risks high profile drainline blockage failures in commercial buildings and the success of the specification.

Suggested Change/Action: Revise the text of Section 2.1.1 as follows:

²Plumbing Efficiency Research Coalition, 2012. "FAQ's – Phase 1 Drainline Transport Study Report." Website: <http://www.plumbingefficiencyresearchcoalition.org/projects/drainline-transport-of-solid-waste-in-buildings/faqs-drainline-transport-study/>

“The manufacturer shall specify a rated flush volume ~~of~~ for the flushometer valve or water closet fixture, which ~~must shall~~ be equal to ~~or less than~~ 1.28 gallons per flush (gpf) (4.8 liters per flush [Lpf]), and not less than 1.0 gpf (3.8 Lpf).”

Topic: In Section 2.1.3, the water efficiency requirement of 1.28 gpf maximum for dual-flush water closets.

Comment: It is not a reasonable approach to only accept a maximum flush volume for dual-flush water closets. The decision to use the 2 small flushes and 1 large flush for dual-flush water closets was made several years ago with the concurrence of manufacturers, regulators, and non-government organizations based on the same research now being quoted to dismiss this metric. Furthermore, the behavioral studies that have been conducted on dual-flush water closets have been *“limited in scope”* and *“do not form the basis for such a significant change”* as pointed out by the Alliance for Water Efficiency (AWE) in their comments submitted to the EPA on June 5, 2014 in regards to the EPA’s WaterSense NOI to develop a draft specification for flushometer-valve water closets.

Rationale: The fact is that the 2:1 flush ratio was set as the reference for tank type WaterSense ratings and legislation in California, Texas, Georgia, Florida, Colorado, New York City, Los Angeles as well as the green plumbing codes. Considerable resources have gone into the design, marketing and installation of dual-flush water closets to inform and promote this considerable water savings innovation in the residential and commercial markets and cannot be disregarded. Work needs to continue to communicate the appropriate use of dual-flush technologies and their inherent water savings. A move to only consider the maximum flush volume will only work to hinder this innovation from the marketplace. A redefinition of dual-flush performance that only recognizes the maximum flush rate may push the small flush design of water closets with a 1.28 gpf maximum into an area of questionable system performance. Without any solid evidence to change the performance aspect of dual-flush water closets which would significantly disrupt the overall marketplace, the 2:1 flush ratio for dual-flush water closets must be maintained.

Based on the information from the supporting document for the draft specification, Watersense indicates that replacing older (pre-1992 EPACT averaging 3.5 gpf) water closets can save 5,400 gallons per fixture annually as compared to only 780 gallons annually when a EPACT (1.6 gpf) fixture is replaced. Elimination of the currently accepted and published dual flush option of 1.6 full flush/1.1 reduced flush may have a deleterious effect on the potential replacements of these pre-1992 EPACT water closets. It has been established that these older water closets will yield 85% greater water savings if they are replaced with Watersense labeled products. Because these older existing fixtures all occur in commercial buildings with older infrastructure (drainlines and water supplies), the dual flush option is necessary for these building owners and operators if Watersense is to achieve the 41 billion gallons of projected water savings. If dual flush as it is currently allowed in the Tank Type specification and numerous plumbing codes and legislation previously cited is prohibited in this specification, it will likely result in these older fixtures not being replaced at all.

Finally, PMI believes that the following studies: *“Flush: Examining the Efficacy of Water Conservation in Dual-Flush Toilets, 2010”* and *“Dual-flush Toilet Project, September 2002”* should have been considered in the development of the draft specification as they contradict the study referenced within the EPA supporting statement. In the EPA supporting statement for this draft specification, EPA indicates that *“water savings are largely based on user behavior and can be influenced by lack of user education, as well as design considerations (e.g. whether the reduced-flush mode requires the user to pull up or push down on the handle)”*.³ EPA cites only a single study conducted by the University of Missouri which looked at only one type of design consideration. In the 2010 study, which looked at a dual-flush flushometer valve installation in a commercial building in Portland, it was

³ Source: WaterSense® Draft Specification for Flushometer-Valve Water Closets Supporting Statement. Document can be found at: http://www.epa.gov/watersense/docs/FVtoilets_supportstat508.pdf

indicated a 1.9 to 1 reduced flush to full flush ratio⁴. Additionally, in the study from 2002 sponsored by the Canada Mortgage and Housing Corporation, it analyzed tank-type dual-flush water closets in commercial settings such as municipal buildings, secondary schools, and institutional settings. From all of these data points the study found that on average for these commercial settings the ratio of reduced flushes to full flushes was 1.7 to 1⁵. Therefore, WaterSense should consider these studies in addition to the one cited in the supporting statement.

Suggested Change/Action: Revise the text of Section 2.1.3 as follows:

“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. For flushometer valves with dual-flush capabilities, these water efficiency requirements shall apply to the full flush mode.”

Topic: In Sections 2.1 and 3.3, *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures* is no longer the most current standard for plastic plumbing fixtures.

Comment: The proposed specification should reference the harmonized standard: *CSA B45.5/IAPMO Z124 Plastic Plumbing Fixtures*.

Rationale: The proposed changes bring the standard reference up to the most current version.

Suggested Change/Action: Revise the text in Sections 2.1 and 3.3 as follows:

- *“2.1 Water consumption shall be tested in accordance with the following ANSI standards as applicable: ASME A112.19.2/CSA B45.1 Ceramic Plumbing Fixtures, ASME A112.19.3/CSA B45.4 Stainless Steel Plumbing Fixtures, or CSA B45.5/IAPMO Z124 ~~IAPMO/ANSI Z124.4~~ Plastic Plumbing Fixtures.”*
- *“3.3 Except as otherwise indicated in this specification, plastic water closet fixtures must conform to applicable requirements in CSA B45.5/IAPMO Z124 ~~IAPMO/ANSI Z124.4~~ when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.”*

Topic: In Section 3.0, the requirement for manufacturers of water closet fixtures to test their product with a flushometer valve from three different manufacturers.

Comment: No evidence has been provided by the EPA to demonstrate that by using three different manufacturer’s flushometer valves that are certified to ASSE 1037/ASME A112.1037/CSA B125.37, and therefore such valves should perform relatively the same, will improve performance and efficiency beyond the testing requirements contained in the applicable consensus standards for water closets. In fact, this additional testing requirement will do nothing more than unnecessarily increase manufacturing costs by threefold.

Rationale: The proposed specification should only reference the applicable consensus standards for water closets (ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124) to ensure that necessary performance and efficiency requirements are met. PMI’s recommendation will also be consistent with the EPA’s own opinion on consensus standards for water closets as stated in the *WaterSense Draft Specification for Flushometer-Valve Water Closets Supporting Statement (page 5)*: *“These national standards have a proven record of ensuring a high level of performance and durability in toilets, and will serve as a good foundation for a WaterSense specification for flushometer-valve toilets.”*

Suggested Change/Action: Revise the text in Sections 3.1, 3.2 and 3.3 as follows:

⁴Source: Flush: Examining the Efficacy of Water Conservation in Dual-Flush Toilets, 2010, Prepared by Masaye Harrison, University of Oregon at Portland, Department of Architecture. Study can be found at: <http://www.map-testing.com/assets/files/2010-commercial-dual-flush-toilet-study-harrison.pdf>

⁵Source: Dual-flush Toilet Project, Canada Mortgage and Housing Corporation, September 2002, Prepared by: Veritec Consulting Inc. Study can be found at: <http://www.cmhc-schl.gc.ca/odpub/pdf/63042.pdf?lang=en>

- “3.1 Except as otherwise indicated in this specification, ceramic water closet fixtures must conform to applicable requirements in ASME A112.19.2/CSA B45.1 ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~”
- “3.2 Except as otherwise indicated in this specification, stainless steel water closet fixtures must conform to applicable requirements in ASME A112.19.3/CSA B45.4 ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and meet the requirements of Sections 2.0, 4.0, and 5.0.~~”
- “3.3 Except as otherwise indicated in this specification, plastic water closet fixtures must conform to applicable requirements in CSA B45.5/IAPMO Z124 ~~IAPMO/ANSI Z124.4~~ ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~”

Topic: The new tri-harmonized ASSE 1037 standard.

Comment: The reference made to the new tri-harmonized ASSE 1037 standard in Sections 4.1 and 6.2 has an editorial error.

Rationale: The proposed change will correct the editorial error by adding an “A” before “112.1037.”

Suggested Change/Action: Revise the text of Sections 4.1 and 6.2 as follows:

- “4.1 Except as otherwise indicated in this specification, flushometer valves must conform to ASSE 1037/ASME A112.1037/CSA B125.37. [Note: WaterSense intends to require flushometer valves to conform to ASSE 1037/ASME A112.1037/CSA B125.37 upon the standard’s release.]”
- “6.2 Flushometer valves shall be marked in accordance with requirements in ASSE 1037/ASME A112.1037/CSA B125.37. [Note: WaterSense intends to require flushometer valves to conform to ASSE 1037/ASME A112.1037/CSA B125.37 upon the standard’s release.] Additional marking requirements for flushometer valves are provided in Sections 6.2.1 and 6.2.2 below.”

Topic: In Section 4.4, the requirements for interchangeability of replaceable or maintainable parts.

Comment: The intent of Section 4.4 is unclear with respect to EPA’s intent.

Rationale: This proposed change will better clarify the intent of the section by aligning with the clarification statement made by WaterSense in regards to requirements for interchangeability of replaceable or maintainable parts in the *WaterSense Specification for Flushing Urinals*. The clarification can be found within the third tab of the recently updated document, *Compendium of WaterSense Product Specification and Certification and Labeling Clarifications*.

Suggested Change/Action: Revise the text of Section 4.4 as follows:

“The manufacturer, at a minimum, must provide product documentation that is clearly marked with specific maintenance/replacement part instructions and identification of correct replacement parts that should be used to ensure ~~attest that the flushometer valve is designed such that replaceable or maintainable parts (e.g., pistons, diaphragms) are not intended to be interchangeable with parts that would cause the device to~~ will not exceed the rated flush volume specified in Section 2.1.1.”

Topic: Flush performance criteria in Sections 5.1 and 5.2.

Comment: The text in these sections is not clear to the intent nor necessary for proper application and enforcement of the draft specification.

Rationale: These sections are not necessary as the draft specification already requires testing to be conducted in accordance with ASSE 1037/ASME A112.1037/CSA B125.37 for flushometer valves.

Suggested Change/Action: Delete the text of Sections 5.1 and 5.2 as follows:

“5.1 Individual flushometer valve samples with average water consumptions greater than their rated flush volume shall be adjusted, if possible, to their rated flush volume prior to performance testing.”

“5.2 Individual flushometer valve samples with average water consumptions less than their rated flush volume shall be performance tested at the measured volume and this volume shall be recorded on the test report.”

(Renumber remaining sections accordingly)

Topic: In Section 5.3, the requirement for one unwaxed paper water closet seat cover to be used during the waste extraction test for flushometer valves and water closet fixtures.

Comment: PMI is concerned with the proposed testing protocol being presented as it has not been vetted through the applicable standard development process.

Rationale: The current testing requirements in ASME A112.19.2/CSA B45.1 are the standard for performance for all water closets. No evidence has been provided by the EPA to show that such requirements should be changed for the products covered by this specification.

Suggested Change/Action: Revise the text in Sections 5.3 through 5.3.3 as follows:

“5.3 Flush performance testing for flushometer valves and water closet fixtures shall be conducted in accordance with the waste extraction test protocol provided in Section 7.10 of ASME A112.19.2/CSA B45.1 and the additional test media and procedural steps for the waste extraction test protocol provided in Sections 5.3.1, 5.3.2, and 5.3.3 below.

5.3.1 Test media used during the waste extraction test shall include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm). The seat cover shall be included in the test media specified in Section 7.10.2 of ASME A112.19.2/CSA B45.1.

5.3.2 Following step “g” of the waste extraction test procedure in Section 7.10.3 of ASME A112.19.2/CSA B45.1, the following procedural step shall be applied.”

5.3.2.1 Immediately after adding crumpled toilet paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface.

5.3.3 After completion of the procedural step identified in Section 5.3.2.1 of this specification, the test protocol shall continue with step “h” of the waste extraction test procedure in Section 7.10.3 of ASME A112.19.2/CSA B45.1.”

Topic: In Section 5.4, the requirement for one unwaxed paper water closet seat cover to be included in the toilet paper test of ASME A112.19.14 for flushometer valves with dual-flush capabilities, in the reduced-flush mode.

Comment: PMI is concerned with the proposed testing protocol being presented as it has not been vetted through the applicable standard development process. EPA did not provide any evidence to show that the testing requirements in ASME A112.19.14 are flawed.

Rationale: The proposed specification should remain consistent with the testing requirements found in ASME A112.19.14, and the additional test media requirement should be deleted from the proposed draft specification.

Suggested Change/Action: Revise the text in Sections 5.4 through 5.4.2.3 as follows:

“5.4 For flushometer valves with dual-flush capabilities, the following flush performance criteria shall apply:

5.4.1 For the full-flush mode, the flush performance testing shall be conducted in accordance with Section 5.3.

5.4.2 For the reduced-flush mode, flush performance testing shall be conducted in accordance with Section 3.2.4 of ASME A112.19.14. Testing shall also include additional test media and revised procedural steps for the toilet paper test protocol specified in Section 3.2.4 of ASME A112.19.14, as provided in Sections 5.4.2.1, 5.4.2.2, and 5.4.2.3 below.

5.4.2.1 Test media used during the toilet paper test shall also include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm).

5.4.2.2 Section 3.2.4.2 of ASME A112.19.14 shall be modified as follows:

“The four 2.0 to 3.0 inch (51 mm to 76 mm) balls of paper that comply with paragraphs 3.2.4.1.1 and 3.2.4.1.2 shall be dropped into the water directly above the well and shall be allowed to wet out completely. Immediately after adding the balls of paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface. Within five seconds of

adding the seat cover, the bowl shall be flushed. This procedure shall be repeated until three sets of data are obtained. Note whether any paper or seat cover are left in the bowl. Flush again and collect any paper or seat cover that discharges from the outlet.”
5.4.2.3 Section 3.2.4.3 of ASME A112.19.14 shall be modified as follows:
“No paper or seat cover shall remain in the well after each initial flush.”

Topic: The product documentation requirements in Section 6.2.2.

Comment: In Section 6.2.2, the same requirement for product documentation is stated twice within this section, and therefore is confusing to the end user.

Rationale: Section 6.2.2 provides redundant requirements. There is no need for the 2nd sentence of Section 6.2.2 as the first sentence already states that manufacturers shall provide specific maintenance/replacement part instructions and identification of correct replacement parts so that the flushometer-valve will not exceed its rated flush volume.

Suggested Change/Action: Revise the text in Section 6.2.2 as follows:

“Product documentation shall be clearly marked with specific maintenance or replacement part instructions and identification of correct replacement parts that should be used to ensure that the device will not exceed its rated flush volume. ~~Under no circumstances can manufacturers provide maintenance instructions or advertise the use of any replacement parts that would cause the flushometer valve to exceed its rated flush volume.”~~

Topic: Missing definition from Section 9.0.

Comment: CSA standards are referenced throughout the draft specification.

Rationale: The proposed change is necessary in order to define all of the standard organizations referenced throughout the draft specification.

Suggested Change/Action: The following text should be added to Section 9.0:

“CSA: Canadian Standards Association”

In closing, PMI continues to support the WaterSense voluntary efficiency program and encourages the development of additional areas of certification based on potential efficiency gains, performance criteria referencing consensus national standards and independent third party certification. We look forward to continuing to work with EPA WaterSense in its future endeavors.

Sincerely,



Matt Sigler
Technical Director
Plumbing Manufacturers International
Office 847-217-7212
msigler@safeplumbing.org

Commenter: Shabbir Rawalpindiwala; Thomas Kramer

Affiliation: Kohler Company

Comment Date: March 13, 2015

Email Attachment:

Kohler Co. 444 Highland Drive Kohler, Wisconsin 53044 920-457-4441 kohler.com

KOHLER.

March 13, 2015

U.S. Environmental Protection Agency
Office of Water – WaterSense Program
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
watersense-products@epa.gov

RE: EPA WaterSense Draft Specification for Flushometer-Valve Water Closets

Dear EPA Office of Water:

As a WaterSense Partner, Kohler Company has made a commitment of working towards sustainability, and has pledged to a philosophy of environmental, social, and economic responsibility. We appreciate the opportunity to provide comments to the U.S. Environmental Protection Agency (EPA) regarding the WaterSense Draft Specification for Flushometer-Valve Water Closets, and would encourage EPA to carefully consider these comments as they relate to further development of this specification.

Topic: General

Comment: Specification not needed

Rationale: It is with good intention that EPA has taken the lead and created the *WaterSense Draft Specification for Flushometer Valve Toilets*, as continued water savings are important to our industry. Unfortunately however, little evidence has been presented to the manufacturers or the ASME/CSA technical committees that has proven a significant amount of water could be saved by instituting such a specification, and that existing standards do not sufficiently address efficiency and performance requirements EPA has proposed. EPA quoted the results of PERC I as justification for this specification, though the PERC technical committee explicitly recommended that EPA consider the results of PERC II before making a final decision on the requirements of this specification.

Suggested Change (or Language): Kohler Company believes that more data is required to justify the need for this specification, and should wait until the results of PERC II are published before moving forward with this specification.

Topic: 1.0 Scope and Objective

Comment: Dual-flush flushometer valves should not be included in this specification
Rationale: Kohler Company has concerns with the inclusion of dual-flush flushometer valves in this specification. While dual-flush flushometer valves have been available for several years, they are still considered to be relatively new to the market, a fact that EPA eludes to in the *WaterSense Draft Specification for Flushometer-Valve Water Closets Supporting Statement* by acknowledging that “To date, water savings from dual-flush flushometer-valve toilets has not been fully researched or documented.” It is concerning that we would move forward with requirements in a specification that does not yet have adequate data supporting its efficiency.

While this specification will mandate that the rated flush volume of a dual-flush valve must not exceed 1.28 GPF, EPA has failed to put flush volume requirements in place for the reduced flush, which would serve as an additional assurance of efficiency. Additionally, EPA has acknowledged that user behavior and familiarity is crucial to the water efficiency of dual-flush products, however even with increased user knowledge, inadvertent selection of the small flush for bulk waste removal could come at a cost of catastrophic plumbing system failures. Further, because the water efficiency requirements proposed in this specification are different than those which are found within the *WaterSense Specification for Tank-Type Toilets*, we believe that EPA has potentially created a situation where the varying requirements could be confusing to building designers, product specifiers, and manufacturers – many of whom currently advertise their 1.6/1.1 GPF dual-flush valves as HET products as their effective flush volume does not exceed 1.28 GPF.

Suggested Change (or Language): Kohler Company recommends that EPA remove reference to dual-flush valves from this specification, including Sections 2.1.3, and 5.4.

Topic: 1.0 Scope and Objective

Comment: “Other flushometer-valve-type technologies” must be defined
Rationale: While the definition of single and dual flush flushometer valves is intuitive, “Other flushometer-valve-type technologies” is not.
Suggested Change (or Language): Kohler Company would recommend that EPA either provide a definition for “other flushometer-valve-type technologies” that aligns with the existing definitions found within the newly tri-harmonized ASSE 1037/ASME A112.1037/CSA B125.37, or remove this covered equipment from this specification.

Topic: 2.0 Water Efficiency Criteria

Comment: 2.1 makes reference to an invalid standard

Rationale: Currently, Section 2.1 of the WaterSense Draft Specification for Flushometer-Valve Water Closets references IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures. This standard was harmonized with CSA B45.5 in 2011 and is no longer current.

Suggested Change (or Language): Kohler Company recommends that in Section 2.1 EPA reference CSA B45.5/IAPMO Z124 – Plastic Plumbing Fixtures.

Topic: 2.0 Water Efficiency Criteria

Comment: 2.1.1 does not indicate the minimum flush volume

Rationale: The EPA WaterSense program has, in part, been successful because it has gone to great lengths to ensure that end users benefit from saving water while not effecting the performance of the product. Kohler Company believes that EPA has set aside that key metric while developing this specification by including the words “or less” while describing the *Water Efficiency Criteria* in Section 2.1.1. At this time, the plumbing industry has not determined what a safe low-end limit is for flushing performance beyond that of the 1.28 GPF high-efficiency toilets on the market today. While we understand that products may successfully meet the requirements set forth in Section 5.0 – *Flush Performance Criteria*, that does not mean that a toilet that flushes less than 1.28 GPF can safely be installed in all applications, not only risking performance but also consumer confidence.

Suggested Change (or Language): Kohler Company recommends that EPA change the language in Section 2.1.1 to read, “The manufacturer shall specify a rated flush volume of the flushometer valve or water closet fixture to be equal to 1.28 gallons (4.8 liters) per flush.” This will provide users with a 20 percent water savings, while maintaining a performance requirement at a level the industry is confident will provide an effective flush.

Topic: 2.0 Water Efficiency Criteria

Comment: 2.1.3 should have the same requirements as dual-flush tank-type toilets

Rationale: While Kohler Company is not in agreement EPA’s inclusion of dual-flush valves and fixtures in this specification, we believe that if dual-flush valve are included in the specification the *Water Efficiency Criteria* must be in alignment with the requirements found within the *WaterSense Specification for Tank-Type Toilets*.

Suggested Change (or Language): Kohler Company recommends that EPA change the language in Section 2.1.3 to read, “For flushometer valves with dual-flush capabilities, these water efficiency requirements shall apply to the effective flush volume. The effective flush volume is the average flush volume of two reduced flushes and one full flush.”

Topic: 3.0 General Water Closet Fixture Requirements

Comment: No basis for requiring testing with multiple valves

Rationale: EPA has included in this specification a requirement to test water closets with three different flushometer valves. While the intention of this requirement may be worthy, no data has been provided by EPA as to why it is needed, only to state in their supporting statement that this will “ensure consistent performance.” We believe that this requirement will add a significant amount of time and cost to testing these products, while providing little benefit. The manufacturer is being forced to repeat a requirement for the valve found in *ASSE 1037 Pressurized Flushing Devices*, and by nature is already ensuring the consistent performance EPA is seeking. Further, this is a testing requirement that exceeds well beyond the requirements that have been vetted and agreed upon in the national consensus standards. Because no data related to inconsistent performance has been included, Kohler Company would suggest that EPA present this data to the appropriate ASME task group for consideration of the inclusion of this requirement in the appropriate standards.

Suggested Change (or Language): Kohler Company recommends that EPA remove the requirement for testing water closet fixtures with multiple flush valves throughout Section 3.0 – General Water Closet Fixture Requirements.

Topic: 3.0 General Water Closet Fixture Requirements

Comment: 3.3 makes reference to an invalid standard

Rationale: Currently, Section 3.3 of the *WaterSense Draft Specification for Flushometer-Valve Water Closets* references *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures*. This standard was harmonized with CSA B45.5 in 2011 and is no longer current.

Suggested Change (or Language): Kohler Company recommends that in Section 3.3 EPA reference *CSA B45.5/IAPMO Z124 – Plastic Plumbing Fixtures*.

Topic: 4.0 General Flushometer Valve Requirements

Comment: 4.1 requires editorial correction

Rationale: Currently, Section 4.1 of the *WaterSense Draft Specification for Flushometer-Valve Water Closets* references ASSE 1037/ASME 112.1037/CSA B125.37, which is incorrect.

Suggested Change (or Language): Kohler Company recommends that in Section 4.1 EPA reference ASSE 1037/ASME A112.1037/CSA B125.37.

Topic: 4.0 General Flushometer Valve Requirements

Comment: The intent of the words “must attest” in Section 4.4 is unclear

Rationale: These same words “must attest” have created controversy previously for EPA in the *WaterSense Specification for Flushing Urinals*. Based on the clarification that was published 1/24/2013 to help industry understand the requirement, Kohler

Company believes that this section is meant to deter the manufacturer from providing the end customer with replacement parts or instructions on how to alter the flush volume of a valve. We do not believe that EPA intends to require that manufacturers must have physical differences within the valve body which would prevent parts from being interchangeable, as such a requirement would be cost prohibitive for the producer in today's manufacturing environment.

Suggested Change (or Language): Kohler Company recommends that EPA remove Section 4.4. Based on the previous clarification for *WaterSense Specification for Flushing Urinals*, we believe that the intent of this section is covered in Section 6.2.1.

Topic: 5.0 Flush Performance Criteria

Comment: No basis for requiring additional test media in Sections 5.3 and 5.4

Rationale: EPA has included in this specification a requirement to add additional test media that exceeds testing requirements that have been vetted and agreed upon in the national consensus standards. While the intention of this requirement may be worthy, no data has been provided by EPA as to why it is needed, only to state in their supporting statement that the addition of this additional media represents some additional level or assurance for flushometer-valve toilet performance. Kohler Company would suggest that EPA present data which supports the inclusion of additional test media to the appropriate ASME task group for consideration of this requirement in the appropriate standards.

Suggested Change (or Language): Kohler Company recommends that EPA remove the requirement for testing water closet fixtures with one unwaxed paper water closet seat cover throughout *Section 5.0 – Flush Performance Criteria*, and as a result can remove Section 5.0 in its entirety, as the flush performance requirements are already covered in Sections 3.0 and 4.0.

Topic: 6.0 Product Marking

Comment: Section 6.2.2 should be added to 6.2.1

Rationale: Sections 6.2.1 and 6.2.2 both state the same requirement, which makes the requirements unclear to the reader.

Suggested Change (or Language): Kohler Company recommends that EPA delete section 6.2.2 and change the language in 6.2.1 to read, "The flushometer valve and its included product documentation must not provide instruction directing the user to specific maintenance or replacement parts that would cause the flushometer valve to exceed its rated flush volume specified in Section 2.1.1."

Topic: 9.0 Definitions

Comment: A definition for CSA has been excluded

Rationale: While CSA does reference Canadian Standards Association, it may seem that it would not apply to the requirements of a U.S. EPA specification, however because

many of the standards referenced within this document have been harmonized with the CSA standard, it is important that a definition be included.

Suggested Change (or Language): Kohler Company recommends that EPA include the following definition within Section 9.0, "CSA: Canadian Standards Association."

Again thank you for the opportunity to comment. As a leading manufacturer of kitchen and bath plumbing products worldwide, Kohler Co. applauds EPA WaterSense for their efforts and focus on water efficiency. We share this same commitment to environmental stewardship and look forward to continuing to work with EPA WaterSense in the future.

Respectfully submitted,

A handwritten signature in black ink that reads "Shabbir Rawalpindiwala".

Shabbir Rawalpindiwala
Manager – Engineering, Codes & Standards
Kohler Company

SR/tk

Commenter: John Bertrand
Affiliation: Moen Incorporated
Comment Date: March 13, 2015

Email Attachment:

Topic: Scope and Objective

Comment: This WaterSense specification provides no user benefit above current products and therefore is unnecessary. Furthermore, because of local jurisdiction requirements, this specification may force some property owners to retrofit a high-efficiency model on to an older system ill-equipped to handle it.

Rationale: Currently, there are flushometer valve toilets certified to the same national performance standards referenced in this draft specification at the same WaterSense maximum flush volume of 1.28 gpf. As noted by the EPA in the NOI, these products “are already subject to rigorous national performance standards” and “these national standards have a proven record of ensuring a high level of performance”. The only notable difference between the current certification requirements and this draft specification is the addition of the toilet seat cover in the waste extraction test. Currently certified products are able to process this additional media in the field every day, and therefore, this slight testing difference does not create “a high level of user satisfaction” any different than current products. This specification would only burden manufacturers with additional testing, certification and annual compliance costs with no added benefit to the consumer.

WaterSense labeled products have become mandatory in some jurisdictions for new and retrofit construction and this specification will effectively limit a property owner’s ability to select the proper device for the installation. Some older installations may not function properly with lower flush volumes resulting in costly maintenance and repairs, and compromising the public health and safety.

Suggested Change (or Language): Discontinue development.

Respectfully submitted,

John Bertrand
Manager – Compliance
Moen Incorporated

Commenter: Shirley Dewi

Affiliation: International Association of Plumbing and Mechanical Officials
Research and Testing (IAPMO R&T)

Comment Date: March 18, 2015

Email Attachment:

Topic: Appendix A section 3.0

Comment: For a complete system, how do you identify the bowl/valve combinations when they are from different manufacturers?

Rationale: Draft product notification template does not reflect this information.

Suggested Change (or Language): Clarify Appendix A section 3.0 and Product Notification template to accommodate this information.

Commenter: Daniel Gleiberman
Affiliation: Sloan Valve Company
Comment Date: March 20, 2015

Dear EPA Watersense-

Attached please find Sloan Valve Company's comments on the EPA Watersense Draft Specification. The Appendix A is referenced in our comments so we ask that it be included.

Thank you for your consideration.

Please do not hesitate to contact me if you have any questions or need any additional information.

Sincerely,

Daniel Gleiberman
Manager-Product Compliance and Government Affairs

SLOAN.

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Email Attachment:

See pages 33 through 61.



March 20, 2015

U.S. Environmental Protection Agency
Office of Water-WaterSense Program
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20460
Watersense-products@erg.com

RE: EPA WATERSENSE DRAFT SPECIFICATION FOR FLUSHOMETER VALVE WATER CLOSETS

Dear EPA Office of Water:

Sloan Valve Company has supported the WaterSense program since its inception, and we are proud to be a WaterSense partner. As the industry leader in the development, design, manufacture, and maintenance of flushometer valves for water closets, we greatly appreciate the opportunity to provide comments on the above referenced draft specification.

We note that EPA WaterSense uses several factors in determining which products to label. Per the WaterSense guidelines, products must:

1. Offer equivalent or superior performance;
2. Be about 20 percent more efficient than standard models;
3. Realize water savings on a national level;
4. Provide measurable results;
5. Achieve water efficiency through several technological options;
6. Be effectively differentiated by the Watersense label; and
7. Be independently certified.

Attached are our detailed comments which follow the template as provided by EPA, identifying the topic, providing comment and rationale, and then offering modifications where needed. All of our proposed changes to the draft specification relate directly back to the 7 factors noted above and will improve the practical use of this specification by manufacturers, water utilities, and consumers and all other stakeholders. Our proposed changes, specifically as it relates to dual-flush flushometers, will ensure that the water savings estimates of up to 41 billion gallons of water calculated in the EPA Watersense supporting statement can be achieved. Without our proposed changes, however, it is likely that very few older inefficient (3.5 gpf or greater) fixtures will be replaced and therefore these ambitious and important water savings will not be realized.

Thank you for the opportunity to provide comments.

Sincerely,

Daniel Gleiberman

Daniel Gleiberman
Manager, Product Compliance and Government Affairs

10500 Seymour Avenue ♦ Franklin Park, Illinois 60131-1259 ♦ Phone 847-671-4300 ♦ Fax 847-671-6944

Template for Public Comment Submission on WaterSense® Draft Specification for Flushometer Valve Toilets

Commenter Name: Daniel Gleiberman

Commenter Affiliation: Sloan Valve Company

Date of Comment Submission: March 20, 2015

Topic: EPA has stated that based on the results of PERC I, drainline blockages are not of significant concern at 1.28 gpf.

Comment: EPA should be cautious in basing their entire rationale for a maximum 1.28 gpf on PERC I. PERC I began the conversation on “How low can we go?” PERC I did not conclude that all plumbing systems can operate safely at 1.28 gpf, but instead cautioned against basing any decisions on the results. The fact is that PERC has only begun to identify the impact of low flow fixtures and fittings in the building environment and their impact on drainline carry.

Rationale: Though the PERC TC did make a recommendation to the EPA to expand their WaterSense program to include commercial, flushometer-valve toilets, they also made a recommendation for the EPA to carefully review and consider the results of PERC II as well¹. Because EPA WaterSense has identified that the majority of water savings will be realized through the replacement of older, inefficient (3.5 gpf or greater) fixtures, it is imperative that these issues of drainline blockages be reviewed prior to this specification being finalized.

Suggested Change/Action: The proposed specification should not be finalized until after the results of PERC II have been documented and reviewed by the EPA and plumbing industry and the applicability to existing building drain line systems is better understood.

Topic: The installation of high-efficiency plumbing fixtures and fittings in older commercial structures.

Comment: Because EPA WaterSense has identified that most of the projected water savings will be realized through the replacement of older, inefficient (3.5 gpf or greater) fixtures with WaterSense certified fixtures, we believe that a statement should be added to the specification that provides guidance to building owners, managers, or designers to have a qualified engineer determine if their specific structure can accommodate the installation of high-efficiency plumbing fixtures and fittings. We also believe that in those instances a dual-flush flushometer valve with flush volumes of 1.6/1.1 may be the

most responsible high efficiency option available to guarantee that these older structures do not experience catastrophic drain line blockages or failures.

Rationale: In WaterSense's supporting documentation it is noted that 28 percent of existing flushometer-valve closets that are installed in commercial structures have flush volumes that exceed the current federal standards. Even though most newer commercial structures will not have any issues with 1.28 gpf water closets, there are those structures with aging sanitary drainage systems that could prove to be a maintenance nightmare, and therefore be a risk to public health/safety. Sloan Valve Company believes it is in the EPA's best interest to include the proposed statement to protect the WaterSense brand.

Suggested Change/Action: The following text should be added to the draft specification factsheet and other applicable documents on the website Section 1.0:

"For renovations and/or retrofits where the use of high-efficiency plumbing fixtures and fittings are being considered, the structure should first be assessed by a qualified plumbing engineer to determine if the sanitary system can accommodate such fixtures and fittings."

Topic: In Section 1.0, the term "flushometer-valve-type technologies" is not defined.

Comment: This term is not clear to the end user, and therefore further clarification is necessary in order for proper application and enforcement.-

Rationale: The proposed text will assist the end user in not misinterpreting the scope of the draft specification.

Suggested Change/Action: Revise the text of Section 1.0 as follows:

"Any other technology that serves the function of a flushometer-valve, falls within the scope of ASSE 1037/ASME A112.1037/CSA B125.37, and which meet these performance specifications." ~~"Any other flushometer-valve-type technologies that meet these performance specifications."~~

Topic: In Section 2.0 (Water Efficiency Criteria), there is not a minimum threshold for water consumption.

Comment: Throughout the plumbing industry, it has been acknowledged that an "unknown yet to be determined" minimum threshold exists where health/safety and performance would be negatively impacted. In fact, it was indicated by the PERC TC that flush volumes between 1.28 gpf and 0.8 gpf need to be further evaluated to better understand drainline performance². Therefore, PMI strongly recommends that the specification contain a minimum flush volume requirement.

Rationale: The PERC I study showed how flush volumes of 0.8 gpf resulted in chaotic and highly inconsistent drainline transport results. This is a red flag that drainline efficacy is at risk using such low flush volumes. We recommend that the specification call for a minimum flush volume requirement of no less than 1.0 gpf for all flush levels, including the reduced flush on dual flush models. Creating an incentive to design and market water closets or flushometer valves that flush less than 1.0 gpf severely risks high profile drainline blockage failures in commercial buildings and the success of the specification.

Suggested Change/Action: Revise the text of Section 2.1.1 as follows:

"The manufacturer shall specify a rated flush volume of for the flushometer valve or water closet fixture, which ~~must~~ shall be equal to or less than 1.28 gallons per flush (gpf) (4.8 liters per flush [Lpf]), and not less than 1.0 gpf (3.8 Lpf)."

Topic: In Section 2.1.3, the water efficiency requirement of 1.28 gpf maximum for dual-flush water closets.

Comment: This specification should not have a different definition or criteria for dual flush flushometer water closets as compared to dual flush tank-type water closets. Not only is this approach not reasonable, it is not supported by fact. EPA has incorrectly relied on anecdotal information and an extremely limited behavioral study to conclude that water savings of about 20 percent will not be realized. Using the composite average of 2 small flushes and 1 large flush to calculate water consumption for

dual-flush water closets was made several years ago with the concurrence of manufacturers, regulators, and non-government organizations based on the same research now being quoted to dismiss this metric. Comments from both the Alliance for Water Efficiency on this specification's NOI and from PMI (both during the NOI and currently for the draft specification) urge EPA WaterSense to adopt language in this specification that is identical to the language in the Tank-Type Water Closet Specification. These two organizations represent a wide array of WaterSense partners and interested stakeholders and we concur with their comments.

Rationale: In addition to being accepted by EPA WaterSense in the Tank-Type Water Closet Specification, the 2:1 flush ratio is utilized and relied upon as an indicator of efficiency in legislation in California, Texas, Georgia, Florida, Colorado, New York City, Los Angeles as well as the green plumbing codes. None of these laws or plumbing codes draw a distinction between residential or commercial applications. These policymakers and technical experts that comprise these code bodies have recognized that these fixtures can achieve water savings as compared to 1992 EPACT levels. Considerable resources have gone into the design, marketing and installation of dual-flush water closets to inform and promote this considerable water savings innovation in the residential and commercial markets and these should not be disregarded.

As proposed by the draft specification, a redefinition of dual-flush performance that only recognizes the maximum flush rate may push the small flush design of water closets with a 1.28 gpf maximum into an area of questionable system performance. We have already stated above and it has been acknowledged by the PERC I research that there is lower limit of water consumption in commercial settings that will lead to catastrophic drain blockages. Without any solid evidence to change the performance aspect of dual-flush water closets which would significantly disrupt the overall marketplace, the 2:1 flush ratio for dual-flush water closets must be maintained.

Based on the information from the supporting document for the draft specification, Watersense indicates that replacing older (pre-1992 EPACT averaging 3.5 gpf) water closets can save 5,400 gallons per fixture annually as compared to only 780 gallons annually when a EPACT (1.6 gpf) fixture is replaced. The total water savings number discrepancy is astounding- 42 billion gallons of water savings from the replacement all pre-1992 EPACT water closets compared to 14 billion gallons of water savings from the replacement of 1.6 gpf water closets. Simply stated, replacing the 28 percent of older water closets will yield 3 times as much water savings and this should be encouraged by EPA WaterSense. In fact, this is going on now in drought stricken and water scarce areas around the United States. Attached as Appendix "A" are sample rebate applications and criteria from various water utilities (all of which are EPA Watersense Partners as well) that currently provide financial incentives for commercial customers to replace 3.5 gpf or greater fixtures with High Efficiency fixtures. These include San Francisco PUC, East Bay MWD, MWD of Southern California, Portland Water Bureau, Denver Water, Soquel Water, and Rock River Texas. This is intended as a sampling of those WaterSense Partners/Water Agencies which provide these incentives and is not an exhaustive list. These financial incentives are only offered for the replacement of pre-1992 EPACT fixtures for good reason. These will yield more water savings for both the customer and the water agency, by EPA estimates 5,400 gallons a year compared to only 780 gallons. **All of these water agencies consider a dual flush flushometer valve to be an HE fixture. This also is for good reason.** All of these water agencies have considered and are aware that older fixtures are in older structures, with drain lines that may be very large in diameter, may have a sag or interruption in the slope, or may have considerable build-up that has occurred over time. The dual-flush option at 1.6/1.1 still offers efficiency and water savings but it also provides the additional water that may be necessary to overcome these adverse conditions in the old drainage system. Therefore, we believe that the draft specification needs to retain the full range of efficient products available as suitable fixture replacements within these older buildings.

Elimination of the currently accepted and published dual flush option of 1.6 full flush/1.1 reduced flush may have a deleterious effect on the potential replacements of these pre-1992 EPACT water closets. It has been established that these older water closets will yield 85% greater water savings if they are replaced with Watersense labeled products. Because these older existing fixtures all occur in

commercial buildings with older infrastructure (drainlines and water supplies), the dual flush option is necessary for these building owners and operators if Watersense is to achieve the 41 billion gallons of projected water savings. If dual flush as it is currently allowed in the Tank Type specification and numerous plumbing codes and legislation previously cited is prohibited in this specification, it will likely result in these older fixtures not being replaced at all. Evidence from existing rebate programs established to encourage these replacements verifies this fact.

Sloan Valve Company also submits that EPA WaterSense has inexplicably ignored two studies that relate directly to calculated water savings of dual flush water closets in commercial settings. These two studies directly refute the statements by EPA in the supporting document. Both of these studies (*"Flush: Examining the Efficacy of Water Conservation in Dual-Flush Toilets, 2010"* and *"Dual-flush Toilet Project, September 2002"*) are easily found through an internet search and should have been considered in the development of the draft specification as they contradict the study referenced within the EPA supporting statement. In the EPA supporting statement for this draft specification, EPA indicates that *"water savings are largely based on user behavior and can be influenced by lack of user education, as well as design considerations (e.g. whether the reduced-flush mode requires the user to pull up or push down on the handle)"*². EPA cites only a single study conducted by the University of Missouri which looked at only one type of design consideration. In the 2010 study, which looked at a dual-flush flushometer valve installation in a commercial building in Portland, it was indicated a 1.9 to 1 reduced flush to full flush ratio³. Additionally, in the study from 2002 sponsored by the Canada Mortgage and Housing Corporation, it analyzed tank-type dual-flush water closets **in commercial settings** such as municipal buildings, secondary schools, and institutional settings. From all of these data points the study found that on average for these commercial settings the ratio of reduced flushes to full flushes was 1.7 to 1⁴. Therefore, WaterSense should consider these studies in addition to the one cited in the supporting statement and conclude that in commercial settings water savings can be about 20 percent more efficient than standard models.

For all of these reasons, the specification should be amended to include the same language pertaining to dual flush that is in the current EPA Watersense Tank-Type Specification.

Suggested Change/Action: Revise the text of Section 2.1.3 as follows:

"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. For flushometer valves with dual-flush capabilities, these water efficiency requirements shall apply to the full-flush mode."

Topic: In Section 3.0, the requirement for manufacturers of water closet fixtures to test their product with a flushometer valve from three different manufacturers.

Comment: No evidence has been provided by the EPA to demonstrate that by using three different manufacturer's flushometer valves that are certified to ASSE 1037/ASME A112.1037/CSA B125.37, and therefore such valves should perform relatively the same, will improve performance and efficiency beyond the testing requirements contained in the applicable consensus standards for water closets. In

² Source: WaterSense® Draft Specification for Flushometer-Valve Water Closets Supporting Statement. Document can be found at: http://www.epa.gov/watersense/docs/FVtoilets_supportstat508.pdf

³Source: Flush: Examining the Efficacy of Water Conservation in Dual-Flush Toilets, 2010, Prepared by Masaye Harrison, University of Oregon at Portland, Department of Architecture. Study can be found at: http://www.map-testing.com/assets/files/2010-commercial_dual-flush_toilet_study-harrison.pdf

⁴Source: Dual-flush Toilet Project, Canada Mortgage and Housing Corporation, September 2002, Prepared by: Veritec Consulting Inc. Study can be found at: <http://www.cmhc-schl.gc.ca/odpub/pdf/63042.pdf?lang=en>

fact, this additional testing requirement will do nothing more than unnecessarily increase manufacturing costs by threefold.

Rationale: The proposed specification should only reference the applicable consensus standards for water closets (ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124) to ensure that necessary performance and efficiency requirements are met. PMI's recommendation will also be consistent with the EPA's own opinion on consensus standards for water closets as stated in the *WaterSense Draft Specification for Flushometer-Valve Water Closets Supporting Statement* (page 5):

"These national standards have a proven record of ensuring a high level of performance and durability in toilets, and will serve as a good foundation for a WaterSense specification for flushometer-valve toilets."

Suggested Change/Action: Revise the text in Sections 3.1, 3.2 and 3.3 as follows:

- "3.1 Except as otherwise indicated in this specification, ceramic water closet fixtures must conform to applicable requirements in ASME A112.19.2/CSA B45.1 ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~"
- "3.2 Except as otherwise indicated in this specification, stainless steel water closet fixtures must conform to applicable requirements in ASME A112.19.3/CSA B45.4 ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and meet the requirements of Sections 2.0, 4.0, and 5.0.~~"
- "3.3 Except as otherwise indicated in this specification, plastic water closet fixtures must conform to applicable requirements in CSA B45.5/IAPMO Z124 IAPMO/ANSI Z124.4 ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~"

Topic: The new tri-harmonized ASSE 1037 standard.

Comment: The reference made to the new tri-harmonized ASSE 1037 standard in Sections 4.1 and 6.2 has an editorial error.

Rationale: The proposed change will correct the editorial error by adding an "A" before "112.1037."

Suggested Change/Action: Revise the text of Sections 4.1 and 6.2 as follows:

- "4.1 Except as otherwise indicated in this specification, flushometer valves must conform to ASSE 1037/ASME A112.1037/CSA B125.37. [Note: WaterSense intends to require flushometer valves to conform to ASSE 1037/ASME A112.1037/CSA B125.37 upon the standard's release.]"
- "6.2 Flushometer valves shall be marked in accordance with requirements in ASSE 1037/ASME A112.1037/CSA B125.37. [Note: WaterSense intends to require flushometer valves to conform to ASSE 1037/ASME A112.1037/CSA B125.37 upon the standard's release.] Additional marking requirements for flushometer valves are provided in Sections 6.2.1 and 6.2.2 below."

Topic: In Section 4.4, the requirements for interchangeability of replaceable or maintainable parts.

Comment: The intent of Section 4.4 is unclear with respect to EPA's intent.

Rationale: This proposed change will better clarify the intent of the section by aligning with the clarification statement made by WaterSense in regards to requirements for interchangeability of replaceable or maintainable parts in the *WaterSense Specification for Flushing Urinals*. The clarification can be found within the third tab of the recently updated document, *Compendium of WaterSense Product Specification and Certification and Labeling Clarifications*.

Suggested Change/Action: Revise the text of Section 4.4 as follows:

"The manufacturer, at a minimum, must provide product documentation that is clearly marked with specific maintenance/replacement part instructions and identification of correct replacement parts that should be used to ensure ~~attest~~ that the flushometer valve is designed such that replaceable or maintainable parts (e.g., pistons, diaphragms) are not intended to be interchangeable with parts that would cause the device to will not exceed the rated flush volume specified in Section 2.1.1."

Topic: Flush performance criteria in Sections 5.1 and 5.2.

Comment: The text in these sections is not clear to the intent nor necessary for proper application and enforcement of the draft specification.

Rationale: These sections are not necessary as the draft specification already requires testing to be conducted in accordance with ASSE 1037/ASME A112.1037/CSA B125.37 for flushometer valves.

Suggested Change/Action: Delete the text of Sections 5.1 and 5.2 as follows:

~~“5.1 Individual flushometer valve samples with average water consumptions greater than their rated flush volume shall be adjusted, if possible, to their rated flush volume prior to performance testing.”~~

~~“5.2 Individual flushometer valve samples with average water consumptions less than their rated flush volume shall be performance tested at the measured volume and this volume shall be recorded on the test report.”~~

(Renumber remaining sections accordingly)

Topic: In Section 5.3, the requirement for one unwaxed paper water closet seat cover to be used during the waste extraction test for flushometer valves and water closet fixtures.

Comment: PMI is concerned with the proposed testing protocol being presented as it has not been vetted through the applicable standard development process.

Rationale: The current testing requirements in ASME A112.19.2/CSA B45.1 are the standard for performance for all water closets. No evidence has been provided by the EPA to show that such requirements should be changed for the products covered by this specification.

Suggested Change/Action: Revise the text in Sections 5.3 through 5.3.3 as follows:

~~“5.3 Flush performance testing for flushometer valves and water closet fixtures shall be conducted in accordance with the waste extraction test protocol provided in Section 7.10 of ASME A112.19.2/CSA B45.1 and the additional test media and procedural steps for the waste extraction test protocol provided in Sections 5.3.1, 5.3.2, and 5.3.3 below.~~

~~5.3.1 Test media used during the waste extraction test shall include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm). The seat cover shall be included in the test media specified in Section 7.10.2 of ASME A112.19.2/CSA B45.1.~~

~~5.3.2 Following step “g” of the waste extraction test procedure in Section 7.10.3 of ASME A112.19.2/CSA B45.1, the following procedural step shall be applied.”~~

~~5.3.2.1 Immediately after adding crumpled toilet paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface.~~

~~5.3.3 After completion of the procedural step identified in Section 5.3.2.1 of this specification, the test protocol shall continue with step “h” of the waste extraction test procedure in Section 7.10.3 of ASME A112.19.2/CSA B45.1.”~~

Topic: In Section 5.4, the requirement for one unwaxed paper water closet seat cover to be included in the toilet paper test of ASME A112.19.14 for flushometer valves with dual-flush capabilities, in the reduced-flush mode.

Comment: PMI is concerned with the proposed testing protocol being presented as it has not been vetted through the applicable standard development process. EPA did not provide any evidence to show that the testing requirements in ASME A112.19.14 are flawed.

Rationale: The proposed specification should remain consistent with the testing requirements found in ASME A112.19.14, and the additional test media requirement should be deleted from the proposed draft specification.

Suggested Change/Action: Revise the text in Sections 5.4 through 5.4.2.3 as follows:

~~“5.4 For flushometer valves with dual-flush capabilities, the following flush performance criteria shall apply:~~

~~5.4.1 For the full-flush mode, the flush performance testing shall be conducted in accordance with Section 5.3.~~

~~5.4.2 For the reduced-flush mode, flush performance testing shall be conducted in accordance with Section 3.2.4 of ASME A112.19.14. Testing shall also include additional test media and revised~~

~~procedural steps for the toilet paper test protocol specified in Section 3.2.4 of ASME A112.19.14, as provided in Sections 5.4.2.1, 5.4.2.2, and 5.4.2.3 below.~~

~~5.4.2.1 Test media used during the toilet paper test shall also include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm).~~

~~5.4.2.2 Section 3.2.4.2 of ASME A112.19.14 shall be modified as follows:~~

~~“The four 2.0 to 3.0 inch (51 mm to 76 mm) balls of paper that comply with paragraphs 3.2.4.1.1 and 3.2.4.1.2 shall be dropped into the water directly above the well and shall be allowed to wet out completely. Immediately after adding the balls of paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface. Within five seconds of adding the seat cover, the bowl shall be flushed. This procedure shall be repeated until three sets of data are obtained. Note whether any paper or seat cover are left in the bowl. Flush again and collect any paper or seat cover that discharges from the outlet.”~~

~~5.4.2.3 Section 3.2.4.3 of ASME A112.19.14 shall be modified as follows:~~

~~“No paper or seat cover shall remain in the well after each initial flush.”~~

Topic: The product documentation requirements in Section 6.2.2.

Comment: In Section 6.2.2, the same requirement for product documentation is stated twice within this section, and therefore is confusing to the end user.

Rationale: Section 6.2.2 provides redundant requirements. There is no need for the 2nd sentence of Section 6.2.2 as the first sentence already states that manufacturers shall provide specific maintenance/replacement part instructions and identification of correct replacement parts so that the flushometer-valve will not exceed its rated flush volume.

Suggested Change/Action: Revise the text in Section 6.2.2 as follows:

~~“Product documentation shall be clearly marked with specific maintenance or replacement part instructions and identification of correct replacement parts that should be used to ensure that the device will not exceed its rated flush volume. Under no circumstances can manufacturers provide maintenance instructions or advertise the use of any replacement parts that would cause the flushometer valve to exceed its rated flush volume.”~~

APPENDIX "A"

Sample Water Agency Rebate Forms for Dual-Flush Flushometer Water Closets from:

1. San Francisco Public Utilities Commission
2. Metropolitan Water District of Southern California
3. Portland Water Bureau
4. Soquel Water District
5. Santa Fe Water
6. Denver Water
7. East Bay Municipal Water District
8. Round Rock Texas Water



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission



Application Valid From: 7/1/14 - 6/30/15

High-Efficiency Toilet Rebate Application

ADMIN ONLY	_____
APPROVED	<input type="checkbox"/> REJECT <input type="checkbox"/>
REVIEWED BY	_____

The San Francisco Public Utilities Commission is offering up to \$125 rebate per tank style toilet and up to \$500 per flushometer type toilet for the replacement of toilet(s) using 3.5 gallons per flush (gpf) or more, with qualifying high efficiency toilets that use 1.28 (gpf) or less. **Rebates are no longer provided for the purchase or replacement of 1.6 gpf toilets.**

Tank Style Toilets – Typically found in residential homes and light commercial settings and consist of a water tank and a bowl. Tank style toilets must be WaterSense certified to receive a rebate. The qualifying list can be found at <http://conserve.sfwater.org>

Flushometer Style Toilets – Typically found in commercial settings and consist of a flush valve and a bowl. Flushometer style toilets must be MAP tested to receive a rebate. The qualifying list can be found at <http://conserve.sfwater.org>. Up to \$500 rebate amount applies only to purchases from 7/1/14 - 6/30/15.

IMPORTANT: PLEASE READ THE PROGRAM RULES AND REBATE GUIDELINES BEFORE SUBMITTING YOUR APPLICATION

Account Information (PLEASE PRINT)

Name on Water Account		10-digit Account Number *	
Property or Installation Address	Daytime Phone Number	Email	
Type of Property in Which Toilet(s) Are Installed (E.G. Single-Family House, Multi-Family Dwelling, Etc.)		Toilet Type Installed (Tank Type / Flushometer)	
Total # of Toilets in Property	# of Rebates Requested	Year Property Built	Year Property was Purchased

Applicant Information:

- * Must match the name and address on required W-9 form.
- ** Rebate check will be sent only to the W-9 contact. If W-9 name and address is the same as account name and address, note "same as above" under applicant information.

* First Name	* Last Name		
** Address (as noted on applicant's W-9)	City	State	Zip Code

Your Signature

I certify I have read, understand and agree to the terms and conditions of this rebate program. The undersigned expressly agrees that the SFPUC may inspect all qualifying toilet installations; that installation of qualifying toilet models may not result in lower water bills; and that the SFPUC does not warrant any toilet or installation to be free of defects, the quality of workmanship, or the suitability of the premises for toilet installation. The undersigned further agrees to defend, indemnify and hold harmless the SFPUC, their directors, officers, and employees, against all loss, damage, expense, claims, suits and liability, including attorneys fees resulting from the loss, destruction or damage to property arising out of or in any way connected with the toilet or installation.

Signature (Must be signed with color ink other than black)	Print Name	Date
--	------------	------

*REFER TO YOUR MOST RECENT WATER BILL OR CALL (415) 551-3090 FOR YOUR ACCOUNT NUMBER INFORMATION

High-Efficiency Toilet Rebate Application

Program Rules

1. **Rebates are only for 1.28 gpf toilets (or lower) purchased to replace existing high-volume toilets (3.5 gpf or higher); toilets installed during the addition of a new bathroom are not eligible.**
2. Single family homes are limited to three (3) rebates per home. There is no limit for multi-unit or commercial properties.
3. Properties built in or after 1994 are not eligible to participate as federal requirements mandate any toilet purchased or installed in or after 1994 to have a maximum flush volume of 1.6 gallon per flush.
4. Residential properties purchased after July 1st 2009 are not eligible for rebate as the Residential Energy and Water Conservation Ordinance (76-09) requires high efficiency toilet retrofit at the time of sale.
5. The approved toilet must be installed at an SFPUC service address and toilet must be installed prior to rebate request. A separate application must be submitted for each metered address.
6. Retail account holders with service addresses outside San Francisco may be eligible for rebates and should contact the Water Conservation Section before submitting an application.
7. Tank style toilets must be new and on the current EPA's WaterSense Certified Toilet List. Only the exact model numbers listed will qualify for a rebate; please confirm that both the tank model number and the bowl model number appear on this list. List of qualifying models are subject to change. Visit <http://conserve.sfwater.org> for a list of qualifying models.
8. Flushometer style toilets must be new and on the current MAP tested list. Only the exact model numbers listed will qualify for a rebate; please confirm that both the valve model number and the bowl model number appear on this list. List of qualifying models are subject to change. Visit <http://conserve.sfwater.org> for a list of qualifying models.
9. Rebate amount is not to exceed the purchase price of the bowl and tank/valve (not including tax, labor, other related costs). The proof of payment submitted must indicate the itemized cost of the toilet(s). Receipts and/or invoices that do not include the itemized cost of the toilet(s) will be rejected.
10. A pre-purchase inspection is required for any site where 10 or more toilets are being replaced, have previously received toilet replacement incentives or are planning on remodeling entire building. Please call (415) 551-4730 to schedule an appointment.
11. The SFPUC reserves the right to verify the installation of the toilet(s). Failure to allow an inspection of the installed toilet(s) within 30 days of request or to install the toilet(s) will result in refusal of rebate.
12. An **IRS W-9 form** must be completed by all applicants to receive a rebate. The Social Security or Tax ID number requested in the Rebate application process is in compliance with exemptions to the Federal Privacy Act of 1974, 42 UCS 405 (c) (2)(c). The Internal Revenue Service requires rebate program participants receiving \$600 or more in rebates to be issued an IRS Form 1099 unless exemptions apply. Social Security numbers provided as part of the application process are held in confidence under terms of the Privacy Act and are not divulged or otherwise conveyed to individuals or organizations outside the Rebate Program.
13. Rebate application and W-9 must be completed and returned with the original **proof of payment** postmarked within 60 days of purchase. See Rebate Guidelines for details on acceptable proof of payment.
14. Please make copies for your records. Original receipts will not be returned.
15. Incomplete or illegible applications will be denied.
16. Fixtures that are rebated through another water agency program are not eligible to receive an SFPUC rebate.
17. The SFPUC reserves the right to alter this program at any time. Funding is limited and rebates are available on a first come, first serve basis until funds run out or program terminates. Rebate amounts may change; check the website for current rebate amounts.
18. Applications will only be accepted by mail at the address below. Please allow approximately **12 weeks** for processing after all applicant requirements have been met.
19. Installations of toilets funded by SFPUC rebates are subject to post-inspection. Flushometer valve/bowl combination assemblies must be installed and maintained not to exceed the flush volume and performance specified by the manufacturers. SFPUC rebate recipients found to have tampered, replaced, or adjusted the piston or diaphragm valves to increase flush volumes of their fixtures or swapped out high efficiency bowls with less efficient models will be subject to repayment of the full amount of funding received from the SFPUC.

Please mail applications to:
SFPUC – Water Conservation Section
525 Golden Gate Avenue
San Francisco, CA 94102

Email: waterconservation@sfwater.org Website: <http://conserve.sfwater.org> Phone: (415) 551-4730

Metropolitan's Member Agencies and Communities Served

- Anaheim**
Beverly Hills
Burbank
Calleguas Municipal Water District
 Camarillo
 Camarillo Heights
 Fairview
 Lake Sherwood
 Los Posas Valley
 Moorpark
 Naval Base Ventura County
 Newbury Park
 Oak Park
 Oxnard
 Port Hueme
 Santa Rosa Valley
 Simi Valley
 Somis
 Thousand Oaks
Central Basin Municipal Water District
 Artesia
 Bell
 Bellflower
 Bell Gardens
 Carson
 Cerritos
 Commerce
 Compton
 Cudahy
 Downey
 East Los Angeles
 Florence-Graham
 Hawaiian Gardens
 Huntington Park
 La Habra Heights
 Lakewood
 La Mirada
 Los Nietos
 Lynwood
 Maywood
 Montebello
 Monterey Park
 Norwalk
 Paramount
 Pico Rivera
 Santa Fe Springs
 Signal Hill
 South Gate
 South Whittier
 Vernon
 Walnut Park
 West Whittier
 Whittier
 Willowbrook
- Compton**
Eastern Municipal Water District
 French Valley
 Good Hope
 Hemet
 Homeland
 Juniper Flats
 Lakeview
 Mead Valley
 Menifee
 Moreno Valley
 Murrieta
 Murrieta Hot Springs
 Nuevo
 North Canyon Lake
 Perris
 Quail Valley
 Romoland
 San Jacinto
 Sun City
 Temecula
 Valle Vista
 Winchester
Foothill Municipal Water District
 Altadena
 La Cañada Flintridge
 La Crescenta
 Montrose
Fullerton
Glendale
Inland Empire Utilities Agency
 Chino
 Chino Hills
 Fontana
 Monclair
 Ontario
 Rancho Cucamonga
 Upland
Los Virgenes Municipal Water District
 Agoura
 Agoura Hills
 Calabasas
 Chatsworth
 Hidden Hills
 Lake Manor
 Malibu Lake
 Monte Nido
 Westlake Village
 West Hills
Long Beach
Los Angeles Municipal Water District of Orange County
 Aliso Viejo
 Brea
 Buena Park
 Capistrano Beach
- Corona Del Mar**
 Costa Mesa
 Coto De Coza
 Cypress
 Dana Point
 Fountain Valley
 Garden Grove
 Huntington Beach
 Irvine
 Laguna Beach
 Laguna Hills
 Laguna Niguel
 Laguna Woods
 La Habra
 Lake Forest
 Las Flores
 La Palma
 Los Alamitos
 Mission Viejo
 Monarch Beach
 Newport Beach
 Orange
 Pico Rivera
 Rancho Santa Margarita
 Rossmore
 San Clemente
 San Juan Capistrano
 Seal Beach
 Stanton
 Tustin
 Tustin Foothills
 Villa Park
 Westminster
 Yorba Linda
Pasadena
San Diego County Water Authority
 Alpine
 Bonita
 Bonsall
 Camp Pendleton
 Carlsbad
 Chula Vista
 Del Mar
 El Cajon
 Encinitas
 Escondido
 Fallbrook
 Jamul
 Lakeside
 La Mesa
 Lemon Grove
 Leucadia
 Mount Helix
 National City
 Oceanside
 Pauma Valley
 Poway
- Rainbow**
 Ramona
 Rancho San Diego
 Rancho Santa Fe
 San Diego
 San Marcos
 Santee
 Solana Beach
 Spring Valley
 Valley Center
 Vista
San Fernando
San Marino
Santa Ana
Santa Monica
Three Valleys Municipal Water District
 Azusa
 Charter Oak
 Claremont
 Covina
 Covina Hills
 Diamond Bar
 Glendora
 Industry
 La Verne
 Pomona
 Rowland Heights
 San Dimas
 South San Jose Hills
 Walnut
 West Covina
Torrance
Upper San Gabriel Valley Municipal Water District
 Arcadia
 Avocado Heights
 Azusa
 Baldwin Park
 Bossert
 Bradbury
 Covina
 Duarte
 El Monte
 Glendora
 Hacienda Heights
 Industry
 Inwandle
 La Puente
 Monrovia
 North Whittier
 Rosemead
 San Gabriel
 South El Monte
 South Pasadena
 South San Gabriel
 Spy Glass Hill
 Temple City
- Valinda**
 West Covina
West Basin Municipal Water District
 Alondra Park
 Carson
 Culver City
 Del Aire
 El Camino Village
 El Segundo
 Gardena
 Hawthorne
 Hermosa Beach
 Howard
 Inglewood
 Ladera Heights
 Lawndale
 Lennox
 Lomita
 Malibu
 Manhattan Beach
 Marina Del Rey
 Palms Verdes Estates
 Rancho Palms Verdes
 Redondo Beach
 Rolling Hills
 Rolling Hills Estates
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Western Municipal Water District of Riverside County
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 Corona
 Eagle Valley
 Eastvale
 El Sobrante
 Elsinore
 Jurupa
 Lake Elsinore
 Lake Mathews
 Lee Lake
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The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.



THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Post Office Box 54153
 Los Angeles, CA 90054-0153

www.mwdh2o.com
www.bewaterwise.com



11/11 30m



High-Efficiency Toilet (HET) flushes at 20 percent below a ULFT which flushes at 1.6 gallons per flush, equating to 1.28 gallons per flush or less. The average water savings for HETs is estimated to be 19,000 gallons per year when replacing an average, non-efficient toilet and 4,000 gallons per year when replacing a ULFT. This equals an estimated saving of 38 gallons per day (gpd) when replacing a non- ULFT and 7 gpd when replacing an existing ULFT.

High-Efficiency Toilets are available in Gravity-Fed, Pressure Assist and Dual-Flush models. Dual-Flush toilets which offer a choice of either a 1.6-gallon flush or a 0.8-gallon flush qualify as High-Efficiency Toilets.

Please call 1-888-376-3314 to verify eligibility in your area.

Ultra-Low-Flush Toilet (1.6 gpf) rebates are no longer available.

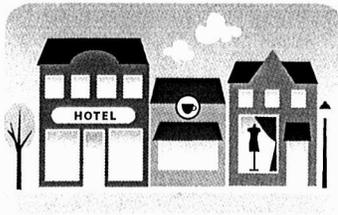
High Efficiency Toilet rebates must have a matching bowl & tank or matching bowl & flushometer valve. Modification of existing valves or use of valve kits does not qualify for a rebate.

For more information on how to purchase qualified products, contact your local plumbing retailer.

Rebates vary by water agency and are subject to change.

[Make your reservation High Efficiency Toilets](#)

▪ [Download the list of Qualified Toilets](#)



Portland Water Bureau Commercial Toilet & Urinal Rebate

Replacing older toilets and urinals are a great way to save water and money! The Portland Water Bureau is offering a \$50 rebate for replacing older fixtures with WaterSense-labeled tank-style toilets and urinals, and approved flushometer toilets. **Commercial accounts including businesses, restaurants, schools and others** are eligible for up to 20 rebates per active domestic water account.

Follow these steps:

1 Select eligible toilets or urinals:

WaterSense-labeled tank style toilets which flush at 1.28 gallons per flush or less are eligible. A complete list of approved models can be found at www.epa.gov/watersense.

WaterSense-labeled urinals which flush at 0.5 gallons per flush or less are eligible. A complete list of approved models can be found at www.epa.gov/watersense.

Flushometer (commercial) style toilets that flush at 1.28 gallons per flush or less AND are indicated by the Maximum Performance Test standard to exceed 350 grams of waste removal. The results of the Maximum Performance Test Standard can be found at www.map-testing.com.

2 Save receipts. A copy of the dated sales receipt (or invoice) is required.

3 Install new toilets or urinals. The toilets or urinals **must** be installed at the property associated with Portland Water Bureau account. Random inspections may occur.

4 Recycle old toilets or urinals and save receipts. Old toilets or urinals must be recycled at one of the approved recycling centers (listed below). Be sure to get a receipt for the recycling.

Clackamas Compost Products • Fee: \$10 minimum; \$10 per cubic yard
11620 SE Capps Rd., Clackamas, 503-557-1028

E.C.R., Environmentally Conscious Recycling • Fee: \$7.50 per toilet
12409 NE San Rafael St., Portland, 503-253-0867

Landscape Products & Supply • Fee: \$10 minimum; \$10 per cubic yard
1748 NE 25th Ave., Hillsboro, 503-846-0881

Metro Transfer Stations • Fee: Minimum \$28 transaction charge for 340 pounds or less. Request that toilet recycling be specified on receipt.
Central: 6161 NW 61st Ave., Portland, 503-234-3000
South: 2001 Washington St., Oregon City, 503-234-3000

S & H Landscape • Fee: \$10 minimum fee, \$7 per cubic yard
20200 SW Stafford Rd., Tualatin, 503-638-1011

5 Complete and sign Commercial Toilet & Urinal Rebate Form (see reverse). Attach the following:

1. Commercial Toilet & Urinal Rebate Form (completed and signed).
2. Sales receipt or invoice (a copy is acceptable).
3. Proof of recycling.
3. W-9 Form.

Mail to: Portland Water Bureau
WaterSense Toilet Rebate
1120 SW 5th Avenue, Room 600
Portland, OR 97204

Email to:
conserve@portlandoregon.gov

6 Receive rebate check. Approximately 4-6 weeks after receiving your completed application and verifying eligibility, the Portland Water Bureau will send a rebate check. We are currently unable to credit your Portland Water Bureau account.

LOOK FOR THE LOGO



WaterSense-labeled tank-style toilets and urinals are eligible for the \$50 rebate. WaterSense-labeled fixtures are 20% more efficient than average products in that category and perform as well or better than their less efficient counterparts.

Toilet Rebate Eligibility & Requirements

- Property must have an active Portland Water Bureau drinking water account in good standing.
- Application must be for a commercial property.
- Applicant must purchase a WaterSense-labeled toilet, urinals or a preapproved flushometer high-efficiency toilet.
- Applicant must recycle the old toilet at an approved recycling center.
- Limit of 20 toilet or urinal rebates per account. Each rebate is worth \$50.
- No more than 60 rebates per organization per program year.
- Rebates are available on a first-come, first-served basis. The program will end when funds are depleted.
- Rebate applications for more than \$600 must include a completed W-9 form.
- Application must be received within one year of toilet purchase date.

Rebate Questions?

(503) 823-4527
conserve@portlandoregon.gov
www.portlandoregon.gov/water/rebate

**Saving water
makes cents!**



Portland Water Bureau
WATER EFFICIENCY PROGRAM
1120 SW Fifth Avenue, Room 600
Portland, OR 97204

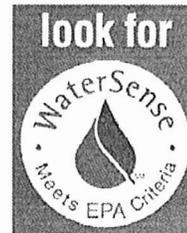
To help ensure equal access to City programs, services and activities, the City of Portland will reasonably modify policies/procedures and provide auxiliary aids/services to persons with disabilities. Call (503) 823-4527 with such requests.



**SOQUEL CREEK
WATER DISTRICT**

Commercial Toilet Rebate Application

High-Efficiency & Ultra-High Efficiency Toilets: Soquel Creek Water District offers rebates for qualifying high-efficiency toilets (**HETs**) that use 1.28 gallons per flush (**gpf**) or less, and ultra-high efficiency toilets (**UHETs**) that use only 0.8 gpf. **Replacement toilets must be EPA WaterSense-approved to qualify for a rebate.** Please see our website at www.soquelcreekwater.org for links to WaterSense approved toilets, or contact us at (831) 475-8500 for assistance.



Please read the Rebate Program Requirements on the backside of this Application. All rebate applications require the signature of the property owner (if different than the applicant).

Check the applicable toilet rebate(s), indicate the number of toilets replaced, the purchase price of qualified parts (i.e. tank, bowl and seat), and the manufacturer name(s) and model number(s) of the new toilet(s) installed. Complete the Account & Applicant Information below. Use additional sheets of paper if necessary.

Toilet Rebate Type	Rebate Amount	# of Toilets	Purchase price of qualified parts	Manufacturer name(s) & model number(s) of toilet(s)
<input type="checkbox"/> Replace 3.5 gpf toilet with High-Efficiency Tank Toilet (1.28 gpf or less)	Up to \$175			
<input type="checkbox"/> Replace 3.5 gpf toilet with Ultra-High Efficiency Tank Toilet (0.8 gpf)	Up to \$300			
<input type="checkbox"/> Replace 1.6 gpf toilet with Ultra-High Efficiency Tank Toilet (0.8 gpf)	Up to \$200			
<input type="checkbox"/> Replace 3.5 gpf toilet with High-Efficiency Flushometer Toilet (1.28 gpf or less)	Up to \$300			

Account & Applicant Information

Property address (where rebated product is installed)

City

Zip Code

Applicant name

Name on water account (if different from applicant)

Account Number

Assessor's Parcel Number (APN)

Applicant mailing address (if different from property address)

City

State

Zip Code

Daytime phone number

Alternative phone number

e-mail address (optional)

Complete both sides of application. See other side for rebate program rules, requirements and signature.



**Commercial, Industrial and Institutional
Toilet and Urinal Rebate Program Application**
July 1, 2014 to June 30, 2015



Please read all the information on this application, including page 2.

1. Applicant Information

Business Name: _____
 Applicant/Contact Name: _____
 Mailing Address: _____
 City: _____ State: _____ Zip: _____
 Installation Address: _____
 Telephone () _____ - _____ / () _____ - _____ Water Account No. _____

2. Fixture Information

Tank Toilets Installed High Efficiency Toilet must be EPA WaterSense labeled

Manufacturer	Model Name	Model Number (s)	Number Replaced

Date purchased: _____ Date installed: _____
 Rebate amount is up to \$100 per tank toilet. Both the tank and the bowl must be replaced.

Flushometer Toilets Installed Flushometer toilet must be from qualified list provided by Coastside County Water District

Manufacturer	Model Name	Model Number (s)	Number Replaced
Bowl			
Valve			

Date purchased: _____ Date installed: _____
 The combined rebate (valve and bowl) is up to \$300 per toilet. Both the valve and bowl must be replaced.

Urinals Installed High efficiency urinal must be EPA WaterSense labeled

Manufacturer	Model Name	Model Number (s)	Number Replaced
Bowl			
Valve			

Date purchased: _____ Date installed: _____
 The combined rebate (valve and bowl) is up to \$300 per urinal. Both the valve and bowl must be replaced.

3. Signature(s)

I understand and agree to the terms and conditions of the rebate program.

Applicant signature: _____ Date: _____
 Property owner signature: _____ Date: _____
 If the applicant is not the property owner, the owner must co-sign the application

4. Please attach original sales receipt(s) or invoice(s) and return completed application to:
Coastside County Water District • 766 Main Street • Half Moon Bay, CA • 94019

For Official Use Only

Inspection Date: _____	Comment: _____
Inspector: _____	Business Type: _____
Application: <input type="checkbox"/> Approved <input type="checkbox"/> Denied	Rebate Amount: \$ _____



High-Efficiency Toilet Rebate Application

The high-efficiency toilet (HET) rebate applies to new HETs purchased after May 1, 2011. Please ensure you have read the terms and conditions before you complete the application below.

NOTE: Original receipt(s) are required. Photocopies will not be accepted.

Applicant details: (please print clearly)

Water Utility account number:

Name:

Telephone number:

Installation address:

Address:

Zip code:

Mailing address: (if different from above)

Address:

City:

State:

Zip code:

Your new HET details:

Brand:

Model Name: Model #:

Purchase date: Installation Date:

Purchase price (individual price with no tax): \$

Number of fixtures replaced:

Amount:

Residential Toilets: @ \$175 each \$

Com. Hotel/Motel HETs: @ \$125 each \$

Com. Tank Type HETs: @ \$250 each \$

Com. Flushometer HETs: @ \$500 each \$

Total Rebate \$

Installed by: (please check one)

Homeowner Plumber In-House Maintenance Staff

Declaration:

I have read and accept the terms and conditions of this agreement and the information contained in this application is truthful and correct to the best of my knowledge. I hereby certify that I am the customer authorized to replace the fixtures at the address listed above.

Applicant's signature: **X**

Date:

Office use only:

Service Address: Cycle: Meter Position: Date Entered:

Case #:

Terms and Conditions

To qualify for a rebate:

1. Purchase and install a new, qualifying high-efficiency toilet (HET) after **May 1, 2011**.
2. Applicant must be a water customer of City of Santa Fe Water Division with an account in their name at the service address where the fixture is installed and at time of purchase.
3. Tank type HETs must have an effective flush volume of 1.28 gallons or less as determined by EPA's WaterSense Program, visit http://www.epa.gov/WaterSense/product_search.html for the WaterSense labeled HET qualifying product list.
4. Flushometer type HETs must have an effective flush volume of 1.28 gallons or less as rated by MaP testing, visit [http://www.allianceforwaterefficiency.org/Maximum_Performance_\(MaP\)_Testing.aspx](http://www.allianceforwaterefficiency.org/Maximum_Performance_(MaP)_Testing.aspx) for the Commercial Flushometer Valve/Bowl Combination Listing qualifying product list.
5. Conversions to "Low Flow Toilets" (1.6 gallons per flush) do not qualify for a rebate.
6. To receive the rebate, City of Santa Fe Water Division requires an original receipt.
7. The completed application must be received no later than 90 days after purchase date.

Please note:

1. The program offers rebates for the retrofit of efficient technologies, and does not apply to purchases for new construction and development.
2. City of Santa Fe Water Division reserves the right to conduct inspections to verify installations of fixtures.
3. Multi-family, mixed-use communities, home offices, and businesses operated out of the home are considered residential customers for applicable rebates.
4. City of Santa Fe Water Division does not warrant, endorse, or assume liability for the quality or performance of the installed equipment related to purchase under this program.
5. Applications will be processed until funds are depleted.
6. City of Santa Fe Water Division reserves the right, at its sole and absolute discretion and at any time, to change any or all of the Terms and Conditions for the rebate program or to cancel the rebate program without prior notice.
7. Incomplete applications will not be processed. Do not mail application with utility payment.
8. You will be required to repay the rebate if any of these terms and conditions is found to have been breached.

Rebate amount:

1. The value of the high-efficiency toilet rebate is:
 - \$175 Residential and Multi-Family HET
 - \$125 Commercial Hotel/Motel HET
 - \$250 Commercial Tank Type HET
 - \$500 Commercial Flushometer Valve HET
2. Rebate payments will be issued as a credit on the customer's utility bill for the installation address.
3. Allow up to 90 days for your completed application to be processed and receive a credit.

For more information on this program, visit www.savewatersantafe.com, or contact the Water Conservation Office at (505) 955-4225.

Submit to:

City of Santa Fe Water Division
HET Rebate
PO Box 909
Santa Fe, New Mexico 87504-0909





- [Home](#)
- [About Denver Water](#)
- [Services](#)
- [Water Conservation](#)
- [Contact Us](#)

Residential Customer 

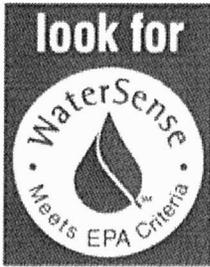


- [Use Only What You Need](#)
- [Tips & Tools](#)
- [Your Water Consumption History](#)
- [Water Use Rules & Regulations](#)
- [Rebates](#)
- [Residential Rebates](#)
- [Commercial Rebates](#)
- [FAQs](#)
- [Qualifying Water Providers](#)
- [Incentive Programs](#)
- [Water Budget Program](#)
- [Audits](#)
- [Car Wash Certification Program](#)
- [Conservation Plan](#)
- [WaterSense](#)
- [Soil Amendment Program](#)
- [Xeriscape](#)
- [Weather Reporting](#)
- [Resource Links](#)

- Home »
- Conservation »
- Rebates »
- Commercial Rebates

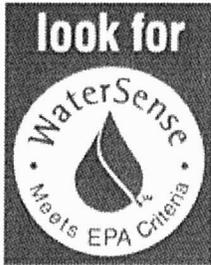
Commercial Rebates

- Rebate rules
- WaterSense-labeled toilets: 1.28 gallons per flush (up to a \$75 rebate); 1.0 gallon per flush or less (up to a \$150 rebate)



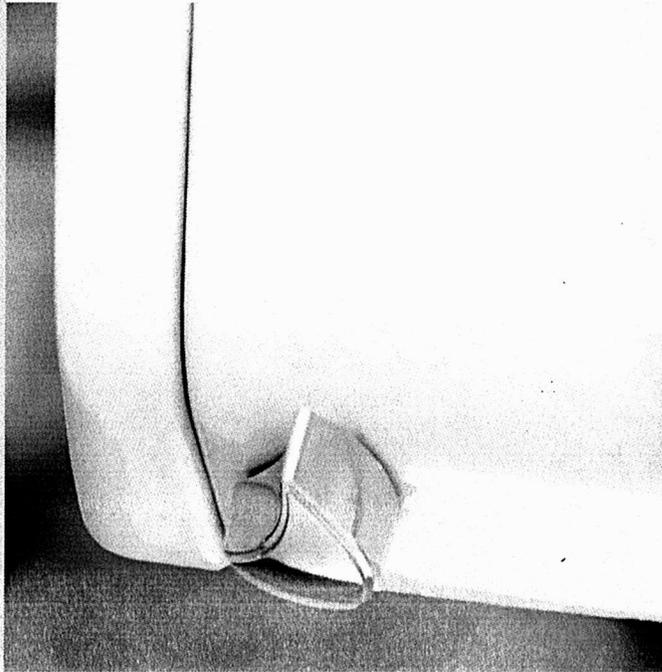
What is WaterSense®?

- WaterSense-labeled high-efficiency urinal rebate (up to \$100 each)



What is WaterSense?

- Flushometer bowl and valve combination rebate (up to \$125 per set)
 - Bowl and valve must both be rated to flush 1.28 gallons per flush or less.
 - Rebate applies to replacement of both the bowl and the valve.
 - Retrofit kits are *not eligible* at this time.



Get a \$50 Rebate for a High-Efficiency Toilet

Effective January 1, 2015

Table of Contents

Overview/Terms and Conditions	2
List of Local Retail Stores and Disposal Sites	3
Application	4
Determining Your Existing Toilet's Flush Volume	5
Application Checklist	5

Get \$50 For Replacing Your Old Toilet With A WaterSense Model

Save Water.

EBMUD offers a rebate of up to \$50 when you upgrade your old toilet using 3.5 gallons per flush (GPF) or higher to a new, high-efficiency model. Replacement of 3.5 GPF flush valve toilets (usually found in non-residential settings) may also qualify for a rebate of up to \$50.

A toilet using 3.5 GPF or more accounts for roughly 26% of a home's indoor water use. One of the easiest ways to lower your toilet's water use by approximately 62% is to install a high-efficiency toilet (HET), which uses on average 1.3 GPF or less. Although HETs use less water, they remove waste effectively and perform well.

Save Money.

- Applies to purchases between January 1, 2015 and June 30, 2015.
- Toilet installation and rebate application postmark must be completed within 90 days of purchase.
- Two rebates per single-family residence.

TERMS AND CONDITIONS

- One rebate per multi-family dwelling unit.
- Past toilet installations rebated by EBMUD count toward limits.
- Commercial account limits are determined on a case-by-case basis.
- All rebates are subject to availability of funds.

Eligible Toilet Replacement

- Must replace a working toilet flushing 3.5 GPF or higher. See *Determining Your Existing Toilet's Flush Volume*, on page 5.
- The exact tank and bowl model number of the toilet you purchase must be on the *WaterSense HETs* list or the *Flushometer Valve/Bowl Combination HET* list.
- Standard 1.6 GPF toilets do not qualify.
- New construction and replacement of toilets installed after 1993 do not qualify.

- Toilet installation must be within the EBMUD water service area and served by an open active EBMUD potable water service account.



To find a qualifying model, look for the WaterSense label, ask your toilet retailer, visit www.ebmud.com/watersmart, or call EBMUD at 1-866-403-2683.

How to Get a Rebate

1. If replacing **10 or more toilets**, call EBMUD at 1-866-403-2683 to schedule a **required pre-installation inspection**.
2. Purchase and install any qualifying model(s).
3. Complete and submit an application with **original purchase receipt(s)**. Contractor's receipt must include applicant's name, and/or installation address.
4. If you need your original receipt(s) returned, please include a self-addressed, stamped envelope.

Rebates are issued as credits applied to your EBMUD account, unless you do not pay the water bill at the address where the toilet is installed. Maximum rebate amount per toilet is up to \$50 or the total cost (excluding sales tax and disposal fee), whichever is less. Rebates may take up to six weeks to process.

List of Local Retail Stores* that stock or special order WaterSense toilets

This list of local retail stores is not inclusive and should not be considered an endorsement of retailers.

Alamo Ace	Alamo	925-837-2420
Albert Nahman Plumbing	Berkeley	510-843-6904
Ashby Lumber Co.	Berkeley	510-843-2225
Ehret Co.	Berkeley	510-528-4292
University Plumbing & Hardware	Berkeley	510-848-2523
Baths & Kitchens 2000	Concord	925-671-9700
Heieck Supply	Concord	925-671-0800
Lowe's	Concord	925-566-9000
Ferguson Enterprises Inc.	Corte Madera	415-924-3200
Olivero Plumbing	El Cerrito	510-233-3511
Cal Steam	Emeryville	510-594-0400
The Lunt Marymore Co.	Emeryville	510-985-2889
Fairfax Lumber & Hardware	Fairfax	415-453-4410
Goodman Building Supply	Mill Valley	415-388-6233
Home Depot	Multiple Locations	800-466-3337
OSH Orchard Supply Hardware	Multiple Locations	888-746-7674
CTW Designs	Novato	415-883-8861
Pini Ace Hardware	Novato	415-892-1577
American Emperor	Oakland	510-536-6868
Foothill Hardware Inc.	Oakland	510-638-9317
Globe Plumbing Supply Co.	Oakland	510-569-6566
Granite Expo	Oakland	510-652-8882
Jack London Kitchen & Bath Gallery	Oakland	510-832-2284
Meyer Plumbing Supply	Oakland	510-832-3324
Moran Supply	Oakland	510-652-7437
Reed Supply Co.	Oakland	510-436-7171
Rubenstein Supply Co.	Oakland/San Rafael	510-444-6614 / 415-454-1174
Sincere Plumbing and Hardware	Oakland	510-832-2838
Style Bath and Kitchen Inc.	Oakland	510-638-8818
Richert Lumber Co.	Pleasanton	925-846-5040
Valley Plumbing	Pleasanton	925-462-1639
New Century Kitchen & Bath	San Leandro	510-347-1818
Reed's Kitchen & Bath	San Leandro	510-352-2174
Jackson's Hardware	San Rafael	415-454-3740
Pace Supply Corp.	San Rafael	415-454-8282
Rafael Lumber	San Rafael	415-453-3043
WHCI Plumbing Supply Co.	Union City/Dublin	510-471-5757 / 925-999-1818
General Plumbing Supply Co.	Walnut Creek	925-939-4622
Leapfrog Plumbing	Walnut Creek	925-933-1245

Manufacturer Customer Service		
American Standard		1-800-442-1902
Caroma		1-800-605-4218
Crane		1-800-442-1902
Duravit		1-888-387-2848
Eljer		1-800-442-1902
Gerber		1-866-538-5536
Kohler		1-888-783-7546
Mansfield		1-877-850-3060
ProFlo (Ferguson)		1-800-221-3379
Toto		1-888-295-8134
Vortens-Lamosa		1-866-821-2811
Zurn		1-877-987-6669

Toilet Disposal Sites		
Berkeley Transfer Station		1201 Second Street, Berkeley 510-981-7270
Davis Street Transfer Station		2615 Davis Street, San Leandro 510-638-2303
Marin Resource Recovery Center (MTRC)		565 Jacoby Street, San Rafael 415-485-5647
Pleasanton Transfer Station		3110 Busch Road, Pleasanton 925-846-2042
Republic Service Vasco Road Landfill		4001 N. Vasco Road, Livermore 925-447-0491

The cost of disposing of an old toilet is about \$10-40. EBMUD does not reimburse the disposal fee.

* This list was compiled by recent visits and/or phone calls to individual stores. Any retail stores selling approved toilets that would like to be added should contact EBMUD's Water Conservation Division at 1-866-403-2683.

High-Efficiency Toilet Rebate Program Application

Complete application, print, and mail with original receipt(s) to:
 EBMUD Water Conservation, P.O. Box 24055, MS 109, Oakland, CA 94623-1055

Offer good for purchases made between January 1, 2015 and June 30, 2015.
 Application must be postmarked **within 90 days of purchase.**
 A separate application must be submitted for each metered address.
Restrictions apply. See Terms and Conditions for details.

PLEASE PRINT:

APPLICANT FIRST NAME _____ LAST NAME _____
 EBMUD ACCOUNT NUMBER _____ PHONE _____
 BUSINESS OR HOA NAME (IF APPLICABLE) _____ EMAIL _____
 INSTALLATION ADDRESS _____ CITY _____ ZIP _____

NEW TOILET INFORMATION (if the information does not fit below, please attach a separate sheet of paper with the requested information.)
 MAKE(S) AND MODEL NUMBER(S) INSTALLED _____ NUMBER OF REBATES REQUESTED _____

APT.	QTY.	APT.	QTY.	APT.	QTY.	APT.	QTY.

APARTMENT NUMBER FOR MULTI-UNIT RESIDENTIAL AND NUMBER OF TOILETS INSTALLED IN EACH APARTMENT (Attach additional sheet of paper, if necessary)

OLD TOILET INFORMATION (This section must be completed for eligibility.)
 NUMBER OF TOILETS AT INSTALLATION ADDRESS _____

PROVIDE THE AGE IN YEARS OR THE DATE OF MANUFACTURE OF THE TOILET(S) BEING REPLACED. THIS IS SOMETIMES FOUND ON THE INSIDE SURFACE OF THE TOILET TANK OR LID.
 OR, IF AGE IS UNKNOWN, REFER TO THE SECTION DETERMINING YOUR EXISTING TOILET'S FLUSH VOLUME AND INDICATE VOLUME HERE _____

CHECK PAYEE INFORMATION (required only when the applicant does not pay the water bill)
 MAKE CHECK PAYABLE TO _____

MAIL CHECK TO _____ CITY _____ ZIP _____

DISCLAIMER:

The undersigned expressly agrees that EBMUD may inspect all properties participating in the WaterSmart High-Efficiency Toilet Rebate Program; that EBMUD does not guarantee the performance of any toilet; and that EBMUD does not warrant any toilet or installation to be free of defects; the quality of workmanship, or the suitability of the premises or the toilet for the installation. The undersigned further agrees to defend, indemnify and hold harmless EBMUD, its directors, officers, agents, and employees, from and against any and all loss, damage, expense, claims suits and liability, including attorneys fees arising out of or in any way connected with the toilet(s) and its (their) installation. Applicant has read, understands and agrees to the terms and conditions listed on the WaterSense Toilet Rebate Program application. Applicant understands that installation of a qualifying high-efficiency toilet may not result in lower water bills. EBMUD reserves the right to add or remove eligible high-efficiency toilets from the list or change the terms of the incentive offer at any time.

PLEASE REVIEW THE APPLICATION CHECKLIST (NEXT PAGE) BEFORE SIGNING THE APPLICATION.

I HAVE READ, UNDERSTAND AND AGREE TO THE TERMS AND CONDITIONS OF THIS REBATE PROGRAM.

SIGNATURE OF APPLICANT _____ DATE _____

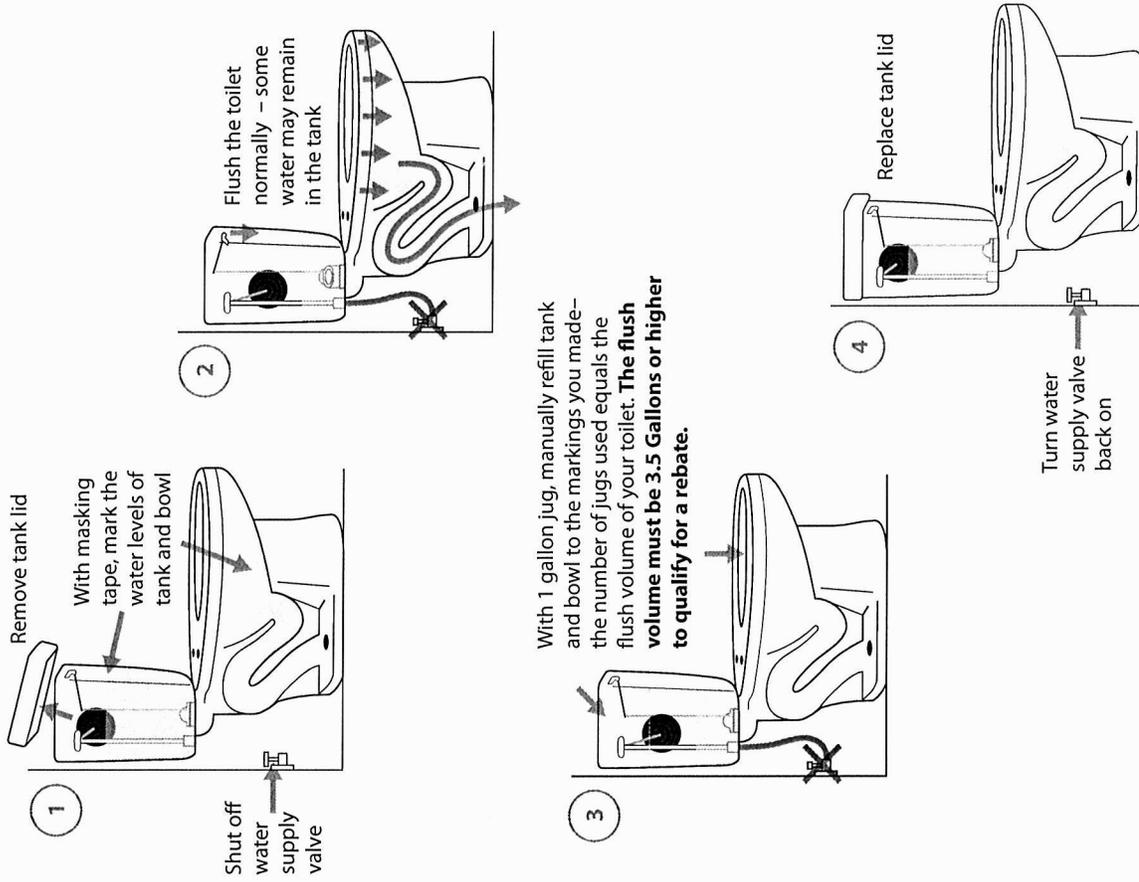
Official Use Only:

WCV: _____ Pending: _____ Approved: _____ BCC: _____
 BY: _____ Denied: _____ By: _____ QTY: _____ AMT: _____

Determining Your Existing Toilet's Flush Volume

Application Checklist

- Did you check that your old toilet meets eligibility rules?
- Did you enclose an original paid receipt showing applicant's name and/or installation address?
- Is the toilet model number printed and legible on the receipt? (UPC and SKU #s accepted)
- Is the EXACT MODEL NUMBER of the toilet you purchased on the qualifying WaterSense list of HETs?
- Have you completely filled out & signed the application form?
- Did you include your water service account number on the application?
- Did you install your HET and mail in the rebate application within 90 days of purchase?



Mail application & receipt(s) to:
 EBMUD
 Water Conservation
 P.O. Box 24055, MS 109
 Oakland, CA 94623-1055

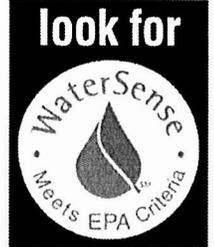


Commercial Property Efficient Toilet Rebate

Application & Guidelines

QUALIFICATION:

- Property must be a **direct** water customer of the City of Round Rock, in good standing.
- Property must have been built **prior to January 1, 2005**.
- New **tank-type toilets** must be **WaterSense approved**. The list is at www.epa.watersense
- New **flushometer toilets** must be **MaP tested**; search list at www.map-testing.com
- Applications for toilets purchased prior to program start date of **March 31, 2014**, will be denied.



APPLICATION PROCEDURE:

1. A pre-inspection is **not** required. Proceed with purchase and installation of new equipment.
2. When project is completed, submit application, signed agreement, and **itemized receipts** within 60-days of installation.
3. Submit a separate application for each water account, if applicable.
4. You may be contacted to schedule a final inspection.
5. The rebate check will be mailed 2-4 weeks after final inspection is completed.

APPLICANT INFORMATION: *(please print clearly, otherwise application will be denied)*

Property Name (on utility bill): _____ Water Account #: _____
 Installation Address: _____ Zip: _____
 Rebate Mailing Address (if different): _____

 Contact Person: _____ Title: _____
 Email: _____ Phone #: _____

PROPERTY INFORMATION

Type of property: Restaurant Service Station Office building Church Retail Apartments
 School/Childcare Medical Office Hotel/Motel Other: _____

Year property was built*: _____ Total # of tank-type toilets: _____ Total # of flush-valve toilets: _____

**Qualifying properties must have been built before January 1, 2005.*

of Employees: _____ Average # of Visitors/Day: _____

TOILET INFORMATION

New Toilet(s) Brand Name & Model Number(s)**: _____

***Qualifying toilet(s) must be WaterSense certified www.epa.gov/watersense*

Total # of tank-type toilets replaced: _____ Total # flush-valve toilets replaced: _____

Itemized Price of new toilet(s): _____

Toilet(s) Installed by: Property Staff Contractor/Plumber Other: _____

CORR USE ONLY	
Date received _____	Rebate Amount _____ Approved _____
Application # _____	Date Rebate Issued _____ By _____
Inspection Date _____	Acct # <u>20041200-5422</u> Finance Apvl.



COMMERCIAL TOILET REBATE PROGRAM AGREEMENT:

- Program participant must be a **direct** water customer of the City of Round Rock in good standing.
- Property must have been built prior to January 1, 2005, to qualify for a rebate.
- New **tank-type toilets** will only be approved from the EPA's WaterSense Certified efficient toilets and must use 1.28 gallons per flush or less. Search list at: epa.gov/watersense Toilet packaging is clearly marked with the WaterSense label.
- New **flushometer toilets** (includes bowl and flush-valve) must be rated by MaP to qualify AND use less than 1.28 gallons per flush. Search the [MaP list](http://www.map-testing.com/downloads.html) for toilets meeting this criteria at <http://www.map-testing.com/downloads.html>
- Rebate applications for toilets purchased and installed prior to program start date of March 31, 2014, will be denied.
- **Rebate amount is 50% of the cost of the toilet** (not plumber costs or tax) **up to a maximum of \$100 per toilet**, if the toilet is purchased from a plumber or retailer with a Round Rock address. If the vendor has a non-Round Rock address, the rebate amount will be 50% of the toilet cost, up to \$50 per toilet.
- Number of toilets rebated will not exceed the number of toilets at the property.
- Total maximum rebate amount is **\$600 per water account**. *Irrigation-only accounts do not qualify for any rebate.*
- A dated and **itemized** sales receipt *must be* submitted with the program application within 60-days of installation date to qualify. Receipt must include date, name of business purchased from and address, toilet(s) price, toilet brands, and model number.
- The City does not endorse specific brands, nor is not responsible for the performance or repair of the new equipment.
- Program applicant is responsible for disposal of old toilet(s). Per state law they cannot be reused.
- A final inspection may be conducted.
- Rebate check will be mailed 2-4 weeks after completed application is processed and approved.
- Rebates are available until funds have been expended. Program is subject to change or end without notice. Check funding status at: www.roundrocktexas.gov/waterconservation or call 512-671-2872.



I have read and agree to the terms stated above. Signed: _____ Date: _____

SUBMIT COMPLETED APPLICATION & PURCHASE RECEIPT TO:

fax # 512-218-5536,

mail: Water Conservation, 2008 Enterprise Dr., Round Rock, TX 78664, or

email: jwoods@roundrocktexas.gov

QUESTIONS? Call Jessica Woods at 512-671-2872 or email jwoods@roundrocktexas.gov

Commenter: Peter DeMarco
Affiliation: The IAPMO Group
Comment Date: March 20, 2015

Email Attachment:

Topic: Scope and Objective

Comment:

- (1) It is suggested that section 1.0 be revised to better clarify that the specification applies to both HETs and flushometer-valves.
- (2) Clarification and perhaps examples should be provided to clarify the meaning of “Any other flushometer-valve technologies” in the last bullet point. This will assist manufacturers, test labs and certifiers in determining the applicability of emerging technologies to the scope of the specification.

Suggested Change (or Language):

1.0 Scope and Objective

This specification establishes the criteria for a high-efficiency flushometer-valve water closet fixture and a high-efficiency flushometer-valve under the U.S.

Environmental Protection Agency’s (EPA’s) WaterSense program. It is applicable to:

- Water closet fixtures that receive liquid and solid waste and use water from a flushometer valve to convey the waste through a trap seal into a gravity drainage system.
- Single-flush flushometer valves that deliver water to water closet fixtures.
- Dual-flush flushometer valves that deliver water to water closet fixtures.
- Any other ~~flushometer valve type~~ technologies that serves the function of a flushometer-valve, falls within the scope of ANSI/ASSE 1037, and which 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.

Topic: Section 2.0 Water Efficiency Criteria

Comment: Subsection 2.1 references an outdated standard title.

Rationale: Currently, Section 2.1 of the *WaterSense Draft Specification for Flushometer-Valve Water Closets* references *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures*. This standard was harmonized with CSA B45.5 in 2011 and is no longer current.

Suggested Change (or Language): IAPMO recommends that in Section 2.1 EPA reference *CSA B45.5/IAPMO Z124 – Plastic Plumbing Fixtures*.

Topic: Section 2.0 Water Efficiency Criteria

Comment: IAPMO strongly recommends that the specification contain a minimum flush volume requirement.

Rationale: The PERC 1 study showed how flush volumes of 0.8 gpf (3.0 Lpf) resulted in chaotic and highly inconsistent drainline transport results and a change in how the waste test media moved in the test apparatus. This is a red flag that drainline efficacy is at risk using flush volumes that low. We recommend that the specification call for a minimum flush volume requirement of no less than 1.0 gpf (3.8 Lpf) for all flush levels, including the reduced flush on dual flush models.

Creating an incentive to design and market labeled toilets / or flushometer-valves that flush less than 1.0 gpf (3.8 Lpf) severely risks high profile drainline blockage failures in commercial buildings and the success of the specification.

Suggested Change (or Language):

2.0 Water Efficiency Criteria

2.1 Water consumption shall be tested in accordance with the following ANSI standards as applicable: *ASME A112.19.2/CSA B45.1 Ceramic Plumbing Fixtures*, *ASME A112.19.3/CSA B45.4 Stainless Steel Plumbing Fixtures*, or *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures.1*

2.1.1 The manufacturer shall specify a rated flush volume of the flushometer valve or water closet fixture, which must be equal to or less than 1.28 gallons per flush (gpf) (4.8 liters per flush [Lpf]). Flushometer-valves must also discharge 1.0 gallons per flush (gpf) (3.8 Lpf) minimum when tested in accordance with the requirements in 2.0.

2.1.2 The water consumption, determined through testing and when evaluated in accordance with the sampling plan contained in the Code of Federal Regulations (CFR) at 10 CFR 429.30, shall ~~not exceed~~ meet the ~~rated~~ flush volumes specified in Section 2.1.1 and 2.1.2.

2.1.3 For flushometer valves with dual-flush capabilities, ~~these~~ maximum water efficiency requirements shall apply to the full-flush mode.

4.2 The flushometer valve must ~~not exceed the rated~~ meet the flush volume of water requirements specified in Section 2.1.1 even if the primary actuator is maintained in the flush position (i.e., device's primary actuator must be a non-hold-open design).

Topic: Section 3.0 General Water Closet Fixture Requirements

Comment: IAPMO suggests that testing of commercial HETs with multiple flushometer-valves is not beneficial.

Rationale: As written, the draft specification includes a requirement to test water closets with three different flushometer valves. In instances where additional testing can significantly improve compliance confidence levels, additional testing is generally helpful. However, in this instance, the additional testing will not significantly increase compliance confidence levels and the additional testing will only serve to increase costs. IAPMO recommends that this requirement be deleted.

Suggested Change (or Language):

3.0 General Water Closet Fixture Requirements

3.1 Except as otherwise indicated in this specification, ceramic water closet fixtures must conform to applicable requirements in *ASME A112.19.2/CSA B45.1*, ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~

3.2 Except as otherwise indicated in this specification, stainless steel water closet fixtures must conform to applicable requirements in *ASME A112.19.3/CSA B45.4* ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and meet the requirements of Sections 2.0, 4.0, and 5.0.~~

3.3 Except as otherwise indicated in this specification, plastic water closet fixtures must conform to applicable requirements in *IAPMO/ANSI Z124.4* ~~when tested with representative flushometer valves from three different flushometer valve manufacturers that have the same rated flush volume and that meet the requirements of Sections 2.0, 4.0, and 5.0.~~

3.4 For water closet fixtures marked with a dual-consumption or consumption range marking, as indicated in Section 6.1, the water closet fixture must also conform to applicable requirements in *ASME A112.19.2/CSA B45.1* and the flush performance criteria identified in Section 5.0 of this specification when tested at the lowest flush volume marked on the water closet fixture. ~~The water closet fixture shall be tested with representative flushometer valves from three different flushometer valve manufacturers.~~

Topic: Section 3.0 General Water Closet Fixture Requirements

Comment: Subsection 3.3 references an outdated standard title.

Rationale: Currently, Section 3.3 of the *WaterSense Draft Specification for Flushometer-Valve Water Closets* references *IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures*. This standard was harmonized with CSA B45.5 in 2011 and is no longer current.

Suggested Change (or Language): Revise section 3.3 EPA to reference *CSA B45.5/IAPMO Z124 – Plastic Plumbing Fixtures*.

Topic: Section 4.0 General Flushometer Valve Requirements

Comment: The wording of subsection 4.4 needs to be clarified.

Rationale: The Alliance supports the intent of Section 4.0. The non-adjustability of flushometer-valves after installation is critical towards the realization of water saving efficiencies throughout the life of the valve. We recommend the revision to the verbiage in subsection 4.4 as shown below.

Suggested Change (or Language):

4.4 ~~The manufacturer must attest that the flushometer valve shall be~~ is designed such that interchangeable replaceable repair or maintainable parts (e.g., pistons, diaphragms, repair kits) ~~are not intended to be interchangeable with parts that would that are offered for sale by the manufacturer do not cause the device flushometer-valve to exceed the maximum~~ rated flush volume specified in Section 2.1.1.

Topic: Section 5.0 Flush Performance Criteria

Comment: IAPMO does not recommend requiring tests using the unwaxed paper toilet seat cover media in called out in Sections 5.3 and 5.4.

Rationale: IAPMO is not aware of reports of performance problems with commercial toilets involving paper toilet seat covers. Further, it is recognized that the specification as written would allow manufacturers and test labs to procure unwaxed paper toilet seat covers of various designs (other than length and width) and different paper stocks. We are not aware of any testing that has been conducted to verify the repeatability of the testing using the draft test procedure.

Suggested Change (or Language):

5.3 Flush performance testing for flushometer valves and water closet fixtures shall be conducted in accordance with the waste extraction test protocol provided in Section 7.10 of *ASME A112.19.2/CSA B45.1*.

~~5.3.1 Test media used during the waste extraction test shall include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm). The seat cover shall be included in the test media specified in Section 7.10.2 of *ASME A112.19.2/CSA B45.1*.~~

~~5.3.2 Following step “g” of the waste extraction test procedure in Section 7.10.3 of *ASME A112.19.2/CSA B45.1*, the following procedural step shall be applied:~~

~~5.3.2.1 Immediately after adding crumpled toilet paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface.~~

~~5.3.3 After completion of the procedural step identified in Section 5.3.2.1 of this specification, the test protocol shall continue with step “h” of the waste extraction test procedure in Section 7.10.3 of *ASME A112.19.2/CSA B45.1*.~~

5.4 For flushometer valves with dual-flush capabilities, the following flush performance criteria shall apply:

5.4.1 For the full-flush mode, the flush performance testing shall be conducted in accordance with Section 5.3.

5.4.2 For the reduced-flush mode, flush performance testing shall be conducted in accordance with Section 3.2.4 of *ASME A112.19.14*.

~~5.4.2.1 Test media used during the toilet paper test shall also include one unwaxed paper water closet seat cover. The seat cover must have a width of 14.0 ± 1.0 inches (356 ± 25 mm) and a length of 16.5 ± 1.0 inches (419 ± 25 mm).~~

~~5.4.2.2 Section 3.2.4.2 of *ASME A112.19.14* shall be modified as follows:~~

~~“The four 2.0 to 3.0 inch (51 mm to 76 mm) balls of paper that comply with paragraphs 3.2.4.1.1 and 3.2.4.1.2 shall be dropped into the water directly above the well and shall be allowed to wet out completely. Immediately after adding the balls of paper, freely drop one unfolded, unwaxed water closet seat cover onto the fixture water surface such that the center of the seat cover is approximately at the center of the water surface. Within five~~

~~seconds of adding the seat cover, the bowl shall be flushed. This procedure shall be repeated until three sets of data are obtained. Note whether any paper or seat cover are left in the bowl. Flush again and collect any paper or seat cover that discharges from the outlet."~~

~~5.4.2.3 Section 3.2.4.3 of ASME A112.19.14 shall be modified as follows: "No paper or seat cover shall remain in the well after each initial flush."~~

Commenter: John Watson
Affiliation: Elkay
Comment Date: March 20, 2015

Email Attachment:



ELKAY®

March 20, 2015

U.S. Environmental Protection Agency
Office of Water – WaterSense Program
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20460
watersense-products@epa.gov

Subject: Feedback on Draft Specification for Flushometer Valve Water Closets

Dear EPA Office of Water,

Thank you for the opportunity to provide feedback on the draft specification for flushometer valve water closets. Outlined below are my comments that I trust you'll consider before finalizing the document.

I'm concerned about the EPA's reputation and the impact this specification could have on an otherwise successful WaterSense program. In my opinion, the risk is not worth the reward; that is, the projected 20% savings by moving from 1.6 gpf to 1.28 gpf in a commercial setting is not worth the potential negative impact that could result from such a change. Instead, the EPA and the industry should focus their efforts on converting all the existing 3.5 gpf and greater water consuming commercial flushing devices to 1.6 gpf – the savings and impact of a plan like that will produce far greater water savings than moving from 1.6 gpf to 1.28 gpf.

I recognize that it's likely the "train has already left the station" on this, but I urge you to consider delaying implementation of this product specification until some additional research on the topic of drain line carry is available; most noteworthy, that would be the next phase of the PERC study being conducted by the industry. The first phase of the PERC study produced some interesting information that in my view confirmed the use of 1.28 gpf devices for residential use, but it cautioned against using the data to make additional decisions until further research could take place.

Here are some additional thoughts to consider:

1. There is a general lack of evidence that moving to a 1.28 gpf flush volume is acceptable in the commercial market. Moreover, based on the limited research available, PERC has cautioned against using the data they've produced to make any additional judgments. Additionally, as the EPA has already acknowledged, there is far more water to be saved by replacing existing 3.5+ flushing devices than by taking an additional 20% off today's 1.6 gpf devices – so our efforts should be geared to replacing these older water consuming products.
2. In addition to the available antidotal evidence, the industry has a general concern with moving to a 1.28 gpf flush volume for commercial use. Having some past experience in this area, I support this concern and can tell you that systems in the commercial market present several challenges not found in the residential market including, but not limited to, how the products are used (frequency of use including periods of non-use), the items that are flushed and the length of drain lines.
3. As we look at the data that is available, I believe we can draw a conclusion that as we lower the flush volumes we see a distinct correlation between flush volume and drain line carry which is more critical to the commercial market where longer drain runs are utilized. In many cases, this will present problems with drain line blockage in the commercial market.
4. If you insist on moving forward with this new specification, I suggest that you leave the current 1.6/1.1 dual flush product in the specification for several reasons; (1) the evidence that this product works in today's market, (2) it will parallel the requirements in the existing WaterSense specification for tank type toilets and (3) while it may not provide you with as much water savings as you'd like to project (20%), it allows you the use of 1.6 gpf if necessary. Here again, the minor additional savings obtained by using a 1.28 gpf (maximum) device is simply not worth the risk.
5. There is an incorrect reference made to a standard that should be corrected; IAPMO/ANSI Z124.4 for Plastic Plumbing Fixtures should be referenced as CSA B45.5/IAPMO Z124.

In summary, when you take all things into consideration, it hardly seems reasonable to implement this high efficiency flushometer valve water closet specification at this time. While I generally support the efforts of the WaterSense program, I feel that waiting until some additional research information is available would be prudent; or perhaps you can start the specification at 1.6 gpf and work towards 1.28 gpf as more evidence on the performance of these devices becomes available.

Thank you again for the opportunity to provide feedback on the draft specification for flushometer valve water closets. Should you have any questions on my feedback or wish to discuss it with me, please don't hesitate to contact me.

Respectfully,



John Watson
Manager, Compliance & Sustainability

Commenter: Daniel Gleiberman
Affiliation: Sloan Valve Company
Comment Date: March 23, 2015

Email Attachment:

Comment: This specification should utilize the exact same language and water consumption/efficiency provisions for dual-flush water closets as the current EPA WaterSense Tank-Type Specification. A wide variety of tank-type water closets that incorporate different design options for the dual flush mechanism have been third-party certified to both the ASME A112.19.14 standard and this EPA WaterSense Specification. While there may be some that feel that buttons work better than levers or vice versa, or that a particular design is more intuitive to the user, there is no discrimination against any design that meets the requirements of the national consensus standard and the EPA WaterSense specification.

Rationale: While EPA WaterSense in both the NOI and the supporting statement for this draft specification indicates that water savings are "largely based on ...design considerations", the fact is that the referenced standard for these types of water closets requires proper identification of the flush mode options, or shall be "intuitively apparent." Therefore, EPA has already acknowledged through the adoption of the Tank-Type specification which references this standard that there is a wide variety of designs for these types of water closets and all of these are acceptable. (Pictorial examples taken from a random Internet search follow this discussion.) For this flushometers valve specification, EPA is correct to reference this same standard (ASME A112.19.14) but they should also include the water efficiency criteria already established in the Tank-Type Specification. It is not appropriate for EPA to single out one particular design and to utilize a single study on that design to arrive at this discrepancy. In exactly the same manner that EPA WaterSense allows for a wide variety of designs for dual flush tank type water closets that meet the specification to be certified, EPA should include the full options in this specification. Examples of other dual flush flushometers designs are included below.

ASME A112.19.14

SIX-LITER WATER CLOSETS EQUIPPED WITH A DUAL FLUSHING DEVICE

1 GENERAL

1.1 Scope

This Standard establishes physical, material, testing, and marking requirements for 6 L water closets that incorporate a water-conserving, dual-flushing feature into the fixture. The tests specified in this Standard are for the removal of liquid wastes and toilet tissue or other comparable waste loads that are expected when actuating the reduced flush feature of the unit.

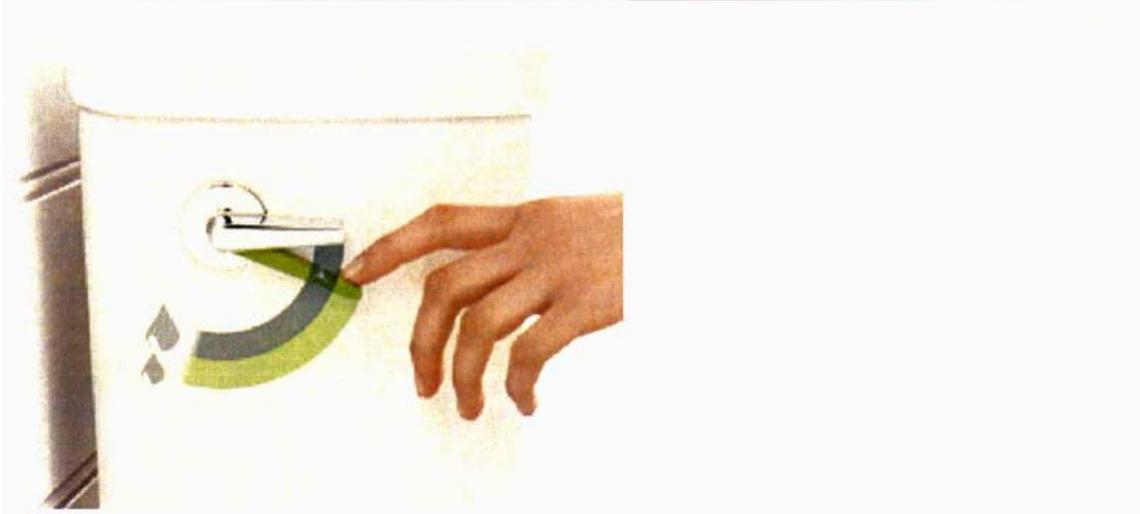
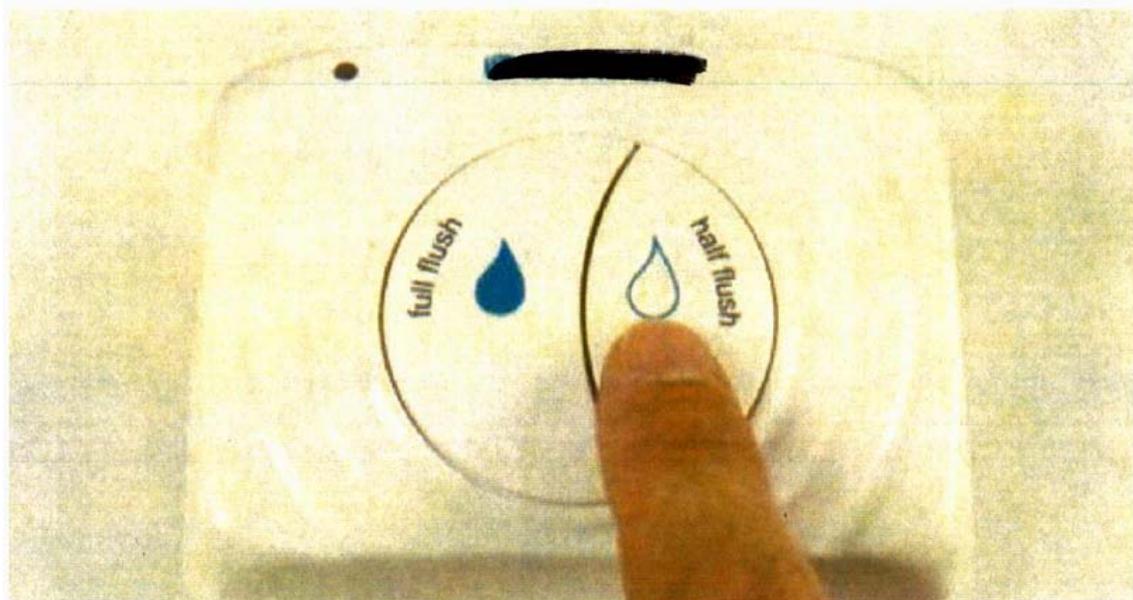
4 MARKING

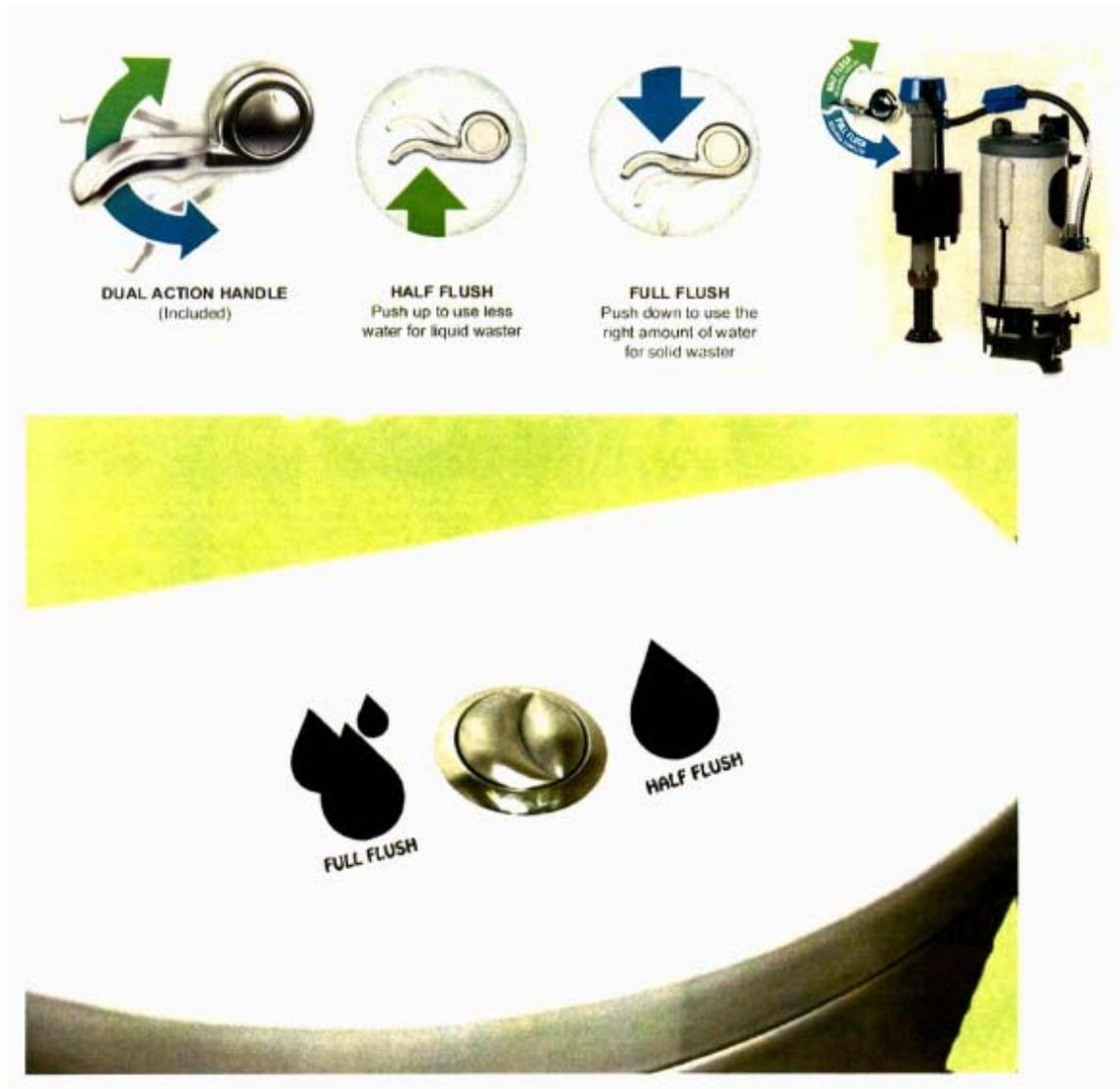
4.1 Identification of Flush Mode Options

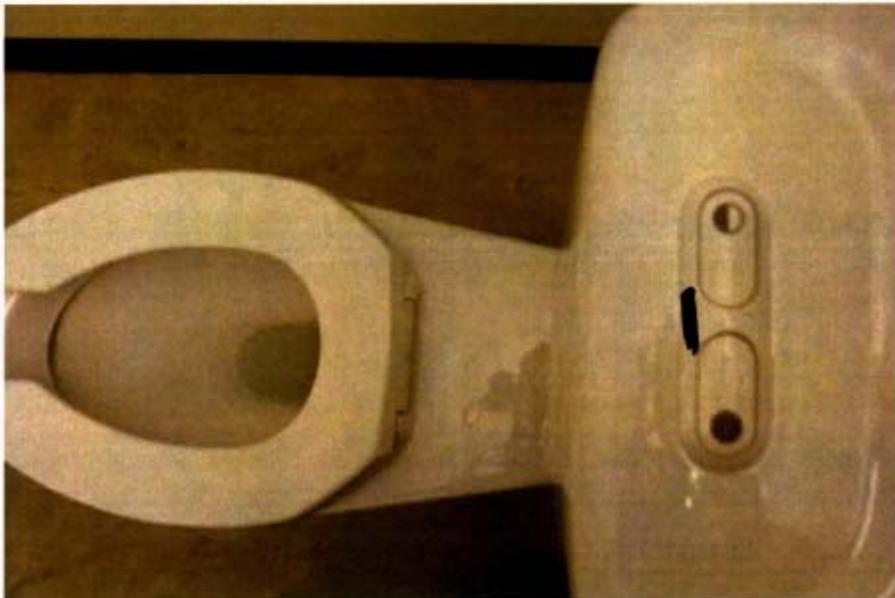
Identification of flush mode options shall be depicted on the actuator. This identification shall be either by graphic display or lettering, or shall be intuitively apparent.

VARIOUS EXISTING DESIGN CONFIGURATIONS FOR DUAL FLUSH WATER CLOSETS

TANK-TYPE WATER CLOSETS







FLUSHOMETER VALVES





Commenter: Dave Bracciano
Affiliation: Tampa Bay Water
Comment Date: March 25, 2015

Email Text:

I am in support of the WaterSense decision to develop a specification for flushometer-valve toilets and flushometer-valves. I do recommend that consideration be given to insure flush volume requirements meet the intent of moving solid waste through the collection system as designed. Of course consideration should be given to pertinent research on the topic.

Topic: Section 3.0 General Water Closet Fixture Requirements

Comment: Testing of commercial HETs with multiple flushometer-valves is not beneficial.

Rationale: As written, the draft specification includes a requirement to test water closets with three different flushometer valves. In instances where additional testing can significantly improve compliance confidence levels, additional testing is generally helpful. However, if the additional testing will not significantly increase compliance confidence levels and the additional testing will only serve to increase costs then it should be deleted.

Topic: Section 4.0 General Flushometer Valve Requirements

Comment: The wording of subsection 4.4 needs to be clarified.

Rationale: I support the intent of Section 4.0. The non-adjustability of flushometer-valves after installation is critical towards the realization of water saving efficiencies throughout the life of the valve. The language in subsection 4.4 should be revised as shown below.

Suggested Change (or Language):

4.4 The manufacturer shall provide documentation with the product that details a list of replacement parts that will maintain the rated flush volume specified in Section 2.1.1.

Dave Bracciano
Demand Management Coordinator
Tampa Bay Water
2575 Enterprise Road
Clearwater, FL 33763



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cell: 813-3341723
www.tampabaywater.org