WaterSense® Public Meeting

Draft Specification for Flushometer-Valve Water Closets

January 15, 2015
Housekeeping

- All participants will be muted until called upon.
- Press *6 to unmute your line. When finished speaking, press *6 to mute your line.
- Do not place the call on hold.
  - If you need to take a call, please disconnect from the conference line and call back when you are finished.
- Ask questions between sections or type your name in the “questions” box to the right to be called upon.
Meeting Agenda

• Introduction to WaterSense
• Flushometer-Valve Water Closets Background and Specification Development Process
• Draft Specification for Flushometer-Valve Water Closets
  – Scope
  – Water Efficiency Criteria
  – General Water Closet Fixture Requirements
  – General Flushometer Valve Requirements
  – Flush Performance Criteria
  – Product Marking
• Certification and Labeling
• Next Steps
Part 1:
Introduction, Background, and Specification Development
What is WaterSense?

- Voluntary partnership and labeling program launched by EPA in 2006 designed to reduce municipal water use across the country
- Simple way for consumers to identify products that use 20 percent less water and perform well
- WaterSense aims to increase the adoption of water-efficient products and services by consumers and organizations
- A label with integrity—third-party certified for water efficiency and performance
WaterSense Product Evaluation Factors

WaterSense uses several factors in determining which products to label.

• Products must:
  – Offer equivalent or superior performance
  – Be about 20 percent more water-efficient than standard models
  – Realize water savings on a national level
  – Provide measurable results
  – Achieve water efficiency through several technological options
  – Be effectively differentiated by the WaterSense label
  – Be independently certified
Flushometer-Valve Water Closets Background

• Flushometer-valve water closets (flushometer-valve toilets):
  – Tankless fixtures comprised of a wall- or floor-mounted fixture attached to a flushometer valve
  – Typically found in commercial, industrial, and other public restrooms

• Approximately 27 million flushometer-valve valve toilets installed in the United States
Flushometer-Valve Water Closets Background

- Energy Policy Act (EPAct) of 1992 set maximum flush volume of 1.6 gallons per flush (gpf) or 6.0 liters per flush (lpf).
  - Many older, pre-EPAct models flush as much as 3 to 7 gpf.

- High-efficiency models flush at 1.28 gpf (4.8 lpf) or less.
  - Americans could save approximately 41 billion gallons of water annually by replacing all inefficient, flushometer-valve toilets with WaterSense labeled models.
Flushometer-Valve Water Closets Background

• Flushometer-valve water closets are made up of a flushometer valve and water closet fixture (e.g., bowl).

• Both play an integral role in ensuring water efficiency and performance.
  – Flushometer valve: A valve attached to a pressurized water supply pipe, designed so that when actuated, opens the line for direct flow into the fixture at a rate and quantity to properly operate the fixture and then gradually close in order to avoid water hammer.
  – Fixture: A device that receives water, waste matter, or both and directs these substances to the drainage system.
Support from the PERC Study

• November 2012 Plumbing Efficiency Research Coalition (PERC) drainline carry study
  – Investigated waste transport through drainline lengths up to 135 feet for flush volumes varying from 0.8 gallons to 1.6 gallons
  – Media successfully cleared from drainline apparatus for all 1.28-gallon test runs

• PERC supports WaterSense specification for flushometer-valve water closets with a maximum flush volume of 1.28 gpf
Flushometer-Valve Water Closets Specification Development Process

- Published Notice of Intent (NOI) in August 2013 outlining potential requirements and outstanding issues for a draft specification
- Held a public meeting on September 12, 2013, to discuss feedback on the NOI
- Evaluated public feedback and resolved outstanding issues
- Published draft specification in December 2014
Part 2:
Draft Specification for Flushometer-Valve Water Closets
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)
Manufacturers must specify a “rated” flush volume for the flushometer valve or water closet fixture, which must be equal to or less than 1.28 gpf.

- Reduces flush volume by 20 percent over the federal maximum
- Is consistent with widely accepted definition of high-efficiency toilet
Water Efficiency Criteria

• For flushometer valves with dual-flush capabilities, the 1.28-gpf maximum flush volume established by the specification applies to the full-flush mode.
  – Setting the maximum full-flush volume at 1.28 gpf guarantees 20 percent water savings from dual-flush toilets. Water savings for dual-flush toilets in commercial settings are:
    • Typically based on user behavior and can be influenced by lack of education, as well as design considerations.
    • Mainly limited to women’s restrooms, as men’s restrooms typically have urinals for liquid waste.

• WaterSense hopes to drive the market to offer more options with even greater water efficiency.
Flush volume shall be tested in accordance with the applicable ANSI Standards:
- ASME A112.19.2/CSA B45.1 Ceramic Plumbing Fixtures
- ASME A112.19.3/CSA B45.4 Stainless Steel Plumbing Fixtures
- IAPMO/ANSI Z124.4 Plastic Plumbing Fixtures

The water consumption, determined through testing, is compared to the rated flush volume to determine compliance.
- The maximum flush volume identified through testing shall not exceed the manufacturer specified flush volume when evaluated in accordance with 10 CFR 429.30.
Scope and Water Efficiency Criteria Questions/Discussion

- Questions/discussion?
General Water Closet Fixture Requirements

• Except as otherwise indicated, water closet fixtures must conform to the applicable requirements in ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, or IAPMO/ANSI Z124.4.
  – Testing shall be conducted with representative flushometer valves from three different manufacturers with the same rated flush volume.

• For water closet fixtures marked with a dual-consumption or consumption range marking, the fixture shall also be tested at the **lowest flush volume marked on the water closet**.
General Flushometer Valve Requirements

• Except as otherwise indicated in the specification, flushometer valves must conform to ASSE 1037/ASME 112.1037/CSA B125.37 (upon its release) and must also:
  – Have a non-hold-open actuator
  – Not be adjustable beyond 10 percent of its rated flush volume
  – Be designed not to intentionally accept replacement or maintenance parts that would override the rated flush volume
Flush Performance Criteria: Single-Flush Water Closets

- Flush performance testing shall be conducted according to the waste extraction test protocol in Section 7.10 of ASME A112.19.2/CSA B45.1.

- WaterSense has added **additional test media** and procedural steps to address the use of seat covers:
  - Unwaxed toilet seat cover shall be used in addition to soy paste and toilet paper indicated in the standard
  - Seat cover should be added to the fixture immediately following addition of the toilet paper
  - Following addition of seat cover, water closet shall be flushed

- Inclusion of a seat cover is a likely and normal occurrence for commercial toilets.
Flush Performance Criteria: Dual-Flush Water Closets

• Full-flush mode tested in accordance with the modified waste extraction test protocol, with the inclusion of the seat cover, as described for single-flush water closets

• Reduced-flush tested in accordance with the toilet paper test protocol in ASME A112.19.14, with additional test media and procedural steps to address the use of seat covers
  – Unwaxed toilet seat cover shall be used in addition to toilet paper indicated in the standard
  – Seat cover should be added to the fixture immediately following addition of toilet paper
  – Following addition of seat cover, the water closet shall be flushed using reduced-flush mode
Performance Requirements

Questions/Discussion

- Are the testing requirements for bowls intended to be marked for compatibility with multiple flush volumes adequate in ensuring the fixture performs at all flush volumes indicated?

- Are the procedures for adding a seat cover to the testing requirements for both single- and dual-flush water closets clear?

- Other questions/discussion?
Product Marking for Water Closet Fixtures

- Water closet fixtures shall be marked in accordance with ASME A112.19.2/CSA B45.1, with one exception.
  - Fixtures **cannot** be marked with the words “or less.”

- Fixtures intended to be used with various flush volumes shall be marked with a dual-consumption or consumption range marking.

- The rated flush volume for the water closet, which must be equal to or less than 1.28 gpf, must fall within this range/consumption marking

- Examples:
  - 1.1 to 1.6 gpf
  - 1.1, 1.28, and 1.6 gpf
Product Marking for Flushometer Valves

• Flushometer valves shall be marked in accordance with ASSE 1037/ASME A112.1037/CSA B125.37 (upon its release).

• Flushometer valves shall not be packaged, marked, or provided with instructions directing the user to an alternative flush volume setting that would override the rated flush volume.

• Product documentation shall clearly identify specific maintenance and replacement parts to maintain the rated flush volume.
Product Marking
Questions/Discussion

- Questions/discussion?
Part 3:
Certification and Labeling

Stephanie Tanner, EPA
Product Certification and Labeling

• Water closet fixtures and flushometer valves can be labeled as:
  – Separate parts
  – A complete system

• If labeled separately, the manufacturer must clearly indicate on product documentation that the fixture or flushometer valve must be used with a corresponding WaterSense labeled counterpart that has a compatible flush volume.
Product Certification and Labeling

• Manufacturers must sign a partnership agreement with EPA in order to have their products labeled.

• All products must be certified by an EPA-licensed certifying body (LCB).
  – Approved list of LCBs will be posted on WaterSense website with the release of the final specification.

• Manufacturers will apply to an LCB of their choice.

• LCBs will certify product in accordance with the WaterSense specification and authorize manufacturers to use WaterSense label.
  – LCBs provide manufacturers with graphic artwork of label.

• Use of the WaterSense label on product packaging is required.
Certification and Labeling
Questions/Discussion

- Questions/discussion?
Part 4: 
Next Steps

Stephanie Tanner, EPA
Next Steps

• Submit written comments to watersense-products@erg.com by February 20, 2015.

• Submit data claimed as CBI to:
  Eastern Research Group, Inc.
  Attn: WaterSense Helpline
  2300 Wilson Boulevard, Suite 350
  Arlington, VA 22201

• EPA will make public the comments received during the comment period.

• Final specification issued after evaluation of public comments.

• The final specification is anticipated in Summer/Fall 2015.
Contact Us

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