

## DOCKETED

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*Comment Received From: Matt Sigler, Plumbing Manufacturers International (PMI)*

*Submitted On: 6/16/2017*

*Docket Number: 17-AAER-09*

**PMI Comment Letter - Docket #17-AAER-09 Tub Spout Diverters**

Refer to attached comment letter and exhibits

*Additional submitted attachment is included below.*



June 16, 2017

Ryan Nelson  
California Energy Commission  
Docket Unit, MS-4  
1516 Ninth Street  
Sacramento, CA 95814-5512

**RE: DOCKET NO. 17-AAER-09 TUB SPOUT DIVERTERS**

**PMI Board of  
Directors**

**Peter Jahrling,**  
Sloan Valve Company  
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Delta Faucet Company  
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**Michael Miller**  
LSP Products

**Todd Teter**  
Moen, Inc.

**Joel Smith**  
Kohler Company

**Chip Way**  
Lavelle Industries

Dear Mr. Nelson:

Plumbing Manufacturers International (PMI) appreciates this opportunity to provide comments to the California Energy Commission (CEC) regarding Docket No. 17-AAER-09 Tub Spout Diverters. PMI is the international, U.S.-based trade association representing 90% of U. S. plumbing products sold in the United States. We have made the promotion of water safety and efficiency a top priority and have included this in our mission statement<sup>1</sup>.

On May 11<sup>th</sup>, the CEC made known during their Phase 2 Pre-Rulemaking Webinar that staff is considering reducing the leakage rate for tub spout diverters below the current requirements of 0.01 gpm when new (pre-life cycle) and 0.05 gpm after 15,000 cycles (post-life cycle). PMI and our members oppose any further reductions in the leakage rate requirements for the following reasons:

- Going below current CEC requirements is a potential safety hazard as there must be a slight amount of leakage out of a tub spout for the diverter to automatically reset. Otherwise, the diverter will remain activated, resulting in a possibly dangerous thermal shock situation for the next user.
- Reducing leakage rates for tub spout diverters does not account for the natural water quality variation effects on long-term diverter performance, such as calcium build-up due to hard water conditions. These conditions, which require regular attention by the homeowner, are the root cause as to why diverters leak over time, not current manufacturing practices.
- Earlier this year, EPA announced their “WaterSense® Notice of Intent to Develop a Draft Specification for Bath and Shower Diverters.” Using the California Energy Commission’s (CEC) Appliance Efficiency Regulations calculations for water usage, the difference in water saved between the CEC regulations and the proposed values in the EPA WaterSense® draft specification would be negligible, especially when factoring in the adoption rate of existing fixtures. Refer to

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<sup>1</sup>PMI’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.

**Exhibit A** for the comment letter submitted by PMI to EPA in regards to their WaterSense® draft specification.

The Commission, during the May 11<sup>th</sup> Phase 2 Pre-Rulemaking Webinar, also requested information on the following pertaining to tub spout diverters: product definition and scope; existing standards and standards under development; existing test procedures; sources of test data; product lifetime; product development trends; maintenance, operation, and function; water savings and efficiency; costs; and market characteristics. Refer to **Exhibit B** for PMI's responses.

For the reasons set forth in this letter, Exhibit A and Exhibit B, PMI and our members oppose any further reductions in leakage requirements for tub spout diverters.

Our partnership with the regulatory and stakeholder communities in the State of California will continue to promote water efficiency that will produce safe, sanitary, efficient and reliable products.

Sincerely,

A handwritten signature in black ink, appearing to read 'MSigler', with a stylized flourish at the end.

Matt Sigler  
Technical Director  
Plumbing Manufacturers International  
Office 847-217-7212  
[msigler@safep plumbing.org](mailto:msigler@safep plumbing.org)

cc: PMI Board of Directors



## EXHIBIT A

February 17, 2017

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

### PMI Board of Directors

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**Joel Smith**  
Kohler Company

**Chip Way**  
Lavelle Industries

### RE: EPA WATERSENSE® DRAFT SPECIFICATION FOR BATH AND SHOWER DIVERTERS

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 Bath and Shower Diverters*. PMI is the international, U.S.-based trade association representing 90% of U. S. plumbing products sold in the United States. We have made the promotion of water safety and efficiency a top priority and have included this in our mission statement<sup>1</sup>. 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 our member companies are longstanding partners in EPA's WaterSense® program.

In regards to EPA's notice of intent (NOI) to develop a draft specification for bath and shower diverters, PMI and our members oppose the draft specification for the following reasons:

- Since the EPA WaterSense® program has matured to include a wide variety of water efficient products, EPA and industry should now focus on accelerating the replacement of older installed products versus developing a new specification that will result in little to no savings and not address the root cause of tub spout leakage, as detailed below. Based on the July 2015 study, titled "U.S. Market Penetration of WaterSense® Shower Heads, Lavatory Faucets and Toilets," the market penetration rates of WaterSense® products throughout the United States are fairly low. According to the study, the following percentages of U.S. homes have WaterSense® products installed<sup>2</sup>:
  - Lavatory faucets = 25.4%
  - Showerheads = 28.7%

<sup>1</sup>PMI'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.

<sup>2</sup> [US Market Penetration of WaterSense Shower Heads, Lavatory Faucets and Toilets](#), GMP Research Industry Report commissioned by PMI, July 2015, pg. 5.

- Water closets = 7.0%
- The proposed “0-0” pre- and post-life cycle requirement is a potential safety hazard as there must be a slight amount of leakage out of a tub spout in order for the diverter to automatically reset. Otherwise, the diverter will remain activated, resulting in a possibly dangerous thermal shock situation as the shower is activated by the next bather.
- The draft specification does not account for the natural water quality variation effects on long-term diverter performance, such as calcium build-up due to hard water conditions. These conditions, which require regular attention by the homeowner, are the root cause as to why diverters leak over time, not current manufacturing practices.
- EPA has identified in the NOI that the volume of wasted water per household per year, based on the California Energy Commission’s (CEC) Appliance Efficiency Regulations, is 53 gallons pre-life cycle and 264 gallons post-life cycle. It should be noted that most manufacturers comply with the requirements of the CEC since they sell diverters in California and don’t generally carry different stock keeping units (SKUs) of diverters based on U.S. regions. Therefore, the difference in water saved per CEC regulations and the proposed values in the draft specification equate to a yearly savings of only 21 cents to \$1.06 per household based on an average cost of \$0.004 per gallon of tap water<sup>3</sup>.
- The EPA is considering requiring both bath/shower trim and bath/shower diverters to be individually third-party certified in order for combination models to bear the WaterSense® label. PMI is greatly concerned about this requirement for the following reasons:
  - Manufacturers now will be required to third-party certify not only the diverter itself but also, separately, the associated trim that comes with the diverter. The current WaterSense® Specification for Showerheads already requires showerheads and the associated trim that comes with the showerhead, which may include a diverter, to be certified. This proposed requirement is overly burdensome to manufacturers, and would have a negative impact on the number of products that manufacturers choose to have WaterSense® certified. This is because manufacturers will be required to have the same tub/shower models listed in two WaterSense® files, thereby doubling certification costs. Furthermore, when annual audit samples are collected, both manufacturers and certification agencies will have to ensure that duplicate testing is not done which is costly and burdensome.
  - The proposed “0-0” diverter performance requirement would needlessly require delisting of many current WaterSense® combination models even though the diverters already meet the stringent CEC standards. More than half the diverter models (54%) in the MAEDBS database do not meet this slight efficiency increase, yet they already provide significant water savings. This “all or none” approach would have a negative impact on the number of products that manufacturers choose to have WaterSense® certified.

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<sup>3</sup> “You Are Paying 300 Times More for Bottled Water than Tap Water”, Business Insider, July 12, 2013, [http://www.slate.com/blogs/business\\_insider/2013/07/12/cost\\_of\\_bottled\\_water\\_vs\\_tap\\_water\\_the\\_difference\\_will\\_shock\\_you.html](http://www.slate.com/blogs/business_insider/2013/07/12/cost_of_bottled_water_vs_tap_water_the_difference_will_shock_you.html)

In summary, PMI continues to support the WaterSense® voluntary efficiency program. However, we do not support the draft specification for the reasons outlined above. PMI believes EPA and industry should concentrate on encouraging the installation of existing WaterSense® products rather than on developing a new specification that will result in minimal water savings, while possibly risking public safety.

Sincerely,

A handwritten signature in black ink, appearing to read "msigler".

Matt Sigler  
Technical Director  
Plumbing Manufacturers International  
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[msigler@safep plumbing.org](mailto:msigler@safep plumbing.org)

cc: PMI Board of Directors



## EXHIBIT B

- **Product Definition and Scope**
  - **Improvements to the current CA definitions?** The current definitions of “lift type,” “pull type,” “turn type,” and “push type” tub spout diverters are not defined in the product standards and are not a part of common terminology used throughout the industry or marketplace. Requiring manufactures to choose one of these options does not add any value to manufacturers, consumers or the CEC.
  - **Other accepted terminology?** Remove current definitions and replace with “bath and shower diverter” to be consistent with ASME A112.18.1/CSA B125.1.
  - **Does CA/WaterSense cover all products and configurations (i.e. roman tub faucets with showerheads, claw foot tub faucets with showerheads, other showerhead system combinations)?** Yes, all products are covered by current CEC requirements, and listed on MAEDBS, including tub spout/showerhead combinations with tub-spout diverters that are intended for use on free-standing tubs.
  - **Other products and configurations (i.e. companion products/fittings, replacement kits/valves)?** No additional products would fall under this category.
  
- **Existing Standards and Standards Under Development.** There is an ongoing standard development process and PMI encourages the Commission to participate in the next ASME A112/CSA Standard Meeting in Halifax, Nova Scotia (Delta Halifax Hotel) from June 21<sup>st</sup> – 23<sup>rd</sup>.
  - **Are there features or designs that prevent tub spout diverters from meeting a maximum leakage rate that is below the current standard?** Yes. With a zero leakage at the tub spout diverter, there will be no relief of operating pressure which means the column of water behind the diverter will have no way to escape. This will create a hydraulically locked situation and the diverter will be difficult to undivert. In this state, the diverter would not be able to reset itself to tub mode which is a requirement in ASME A112.18.1/CSA B125.1, Section 5.6.1.5.2. All plumbing codes, including the California Plumbing Code, require tub spout diverters to be compliant with ASME A112.18.1/CSA B125.1.

If the diverter remains activated, there is potential for thermal shock to the next user. A hydraulically locked situation is also likely to cause accelerated wear on the sealing member resulting in earlier leaking of the seal. Additionally, based on the nature of plumbing systems and components, there is often residual water within the system and its components. This residual water needs to drain and the amount of water will not be reduced by changing the requirements of the tub spout diverter itself.
  - **Should the performance standard include a tolerance level (i.e. structure of tolerance level, residual water, automatic reset diverters)?** The ASME A112.18.1/CSA B125.1 leak test requirement and CEC’s additional tolerance to the hundredths, is sufficient.
  - **Structure of performance standard (i.e. rate vs. volume)?** ASME A112.18.1/CSA B125.1 is sufficient where rate is used.
  
- **Existing Test Procedures**
  - **Are there any limitations or improvements that can be made to the test procedure (i.e. setup/procedure, measuring data, accuracy of equipment)?** Current test procedures are well defined in ASME A112.18.1/CSA B125.1.
  - **Recording/reporting data?** To meet the requirements for CEC, the test measurements are rounded to the hundredths of a gallon per minute (gpm). Therefore, although there are many tub spout diverters listed in the



CEC database as 0, there was most likely a small amount of leakage for several of these tub spout diverters to maintain compliance with ASME A112.18.1/CSA B125.1.

- **Sources of Test Data**

- **Test lab reports?** Tub spout diverters are required to be tested by a CEC recognized test lab.
- **Field studies discussing age of tub spout diverters?** Replacement of a singular integrated tub spout diverter product appears to be at the same rate of typical remodeling which lends to the assumption that tub spouts are not replaced due to age, performance, etc., but rather with home remodeling trends.

Note that showers are becoming more popular than baths and it is not uncommon for a tub/shower with a tub spout diverter to be replaced with a shower base and showering components only, reducing the amount of tub spout diverter installations overall.

- **Product Lifetime.** Product lifetime is highly variable depending on use, water quality, and manufacturer.
- **Product Development Trends.** Individual manufacturer product development efforts are proprietary and PMI does not have this information to share.
- **Maintenance, Operation and Function.** Owner's manuals provided by manufacturers are widely available on the web.
  - **Are there factors (water hardness, water pH, water temperature, pressure) that can cause diverters to leak or cause parts to deteriorate?** Manufacturers are required to test to ASME A112.18.1/CSA B125.1 which utilizes potable water at a specific temperature (100 +/-10 °F to mimic a typical bather) at 10 psi. The quality of potable water varies substantially between regions and localities and therefore it is extremely difficult to characterize every possible water type that could be used with these products. As an example, some locations may have very hard water and mineral deposits build up on the internal components, thus making it difficult to seal as designed.
  - **Do the diverter mechanism parts vary by diverter type?** Yes, and they vary by manufacturer. For example, the parts of a tub spout diverter are totally different than a wall-mount or valve-type diverter.
  - **Which parts are more often replaced? And how often?** Most spouts with serviceable parts are not serviced but rather replaced with new products or simply ignored and left installed. Many can be cleaned however, depending on how harsh the water quality is, products may require constant cleaning which can erode the seals.
  - **Are there any health and safety concerns if the leakage rate is reduced below current standards?** Yes. With a zero leakage at the tub spout diverter, there will be no relief of operating pressure which means the column of water behind the diverter will have no way to escape. This will create a hydraulically locked situation and the diverter will be difficult to undivert. In this state, the diverter would not be able to reset itself to tub mode which is a requirement in ASME A112.18.1/CSA B125.1, Section 5.6.1.5.2. All plumbing codes, including the California Plumbing Code, require tub spout diverters to be compliant with ASME A112.18.1/CSA B125.1.  
If the diverter remains activated, there is potential for thermal shock to the next user. A hydraulically locked situation is also likely to cause accelerated wear on the sealing member resulting in earlier leaking of the seal. Additionally, based on the nature of plumbing systems and components, there is often residual water within the system and its components. This residual water needs to drain and the amount of water will not be reduced by changing the requirements of the tub spout diverter itself.
- **Water Savings and Efficiency.** Earlier this year, EPA announced their "WaterSense® Notice of Intent to Develop a Draft Specification for Bath and Shower Diverters." Using the California Energy Commission's (CEC) Appliance Efficiency Regulations calculations for water usage, the difference in water saved between the CEC regulations and the proposed values in the EPA WaterSense® draft specification would be negligible, especially when factoring in the adoption rate of existing fixtures.
- **Costs.** Retail prices are widely available on the web. Individual manufacturer costs are competitive information and PMI does not have this information to share.

- **Market characteristics.** Individual manufacturer market characteristics are competitive information and PMI does not have this information to share.