



October 12, 2020

The Honorable Daniel R. Simmons  
Assistant Secretary  
Office of Energy Efficiency and Renewable Energy  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, DC 20585-0121

Appliance and Equipment Standards Program  
U.S. Department of Energy  
Building Technologies Office  
950 L'Enfant Plaza, SW., Suite 600  
Washington, DC, 20024.

**Subject: IAPMO's Comments on Docket ID No. EERE-2020-BT-TP-0002 Energy Conservation Program: Test Procedure for Showerheads**

Dear Assistant Secretary Simmons:

On behalf of the International Association of Plumbing and Mechanical Officials (IAPMO), we appreciate the opportunity to provide input on DOE's request for comments on the Department's proposed revised definitions and test procedures for showerheads.

IAPMO is a nearly 100-year old trade association that is an important voice in plumbing industry. The ranks of our members and volunteer participants include plumbing and mechanical contractors, inspectors, engineers, code officials, water and energy experts, and manufacturers of plumbing, mechanical, and building products—all of which benefit from the EPA's WaterSense® labelling program.

We are the developer of the Uniform Plumbing Code, the Uniform Mechanical Code, the Uniform Solar Hydronics and Geothermal Code, the Uniform Swimming Pool, Spa and Hot Tub Code. We are the developer of the Water-Efficiency and Sanitation Standard (WE-Stand), an American National Standard, which provides model safe and effective water efficiency provisions for residential and commercial buildings. IAPMO codes and standards are developed employing an ANSI-accredited open consensus development process and- with exceptions- are published as American National Standards. IAPMO R&T-a part of the IAPMO Group- is an ANSI-accredited third-party certification agency and the industry-preferred certifier of WaterSense labelled plumbing products in North America.

**IAPMO supports updating the definition of "showerhead" to align with the definitions contained in the current ASME A112.18.1/CSA B125.1 standard.** As a matter of practice, all definitions



pertaining to products regulated by Title III of EPCA should align with the definitions contained in product standards that are designated as American National Standards. We further recommend that the DOE also incorporate the definitions for “accessory”, “body spray”, and “safety shower showerhead” contained in the current ASME A112.18.1/CSA B125.1 standard. This standard is incorporated into widely adopted plumbing codes and manufacturers and other industry entities utilize this standard, including the definitions.

However, IAPMO is concerned about the revised test procedures for showerheads that will result in the legalization of high flow showerhead designs, such as those illustrated in Figure 1 in the Notice of Proposed Rule. Such high flow showerhead devices, which under the Department’s revised test procedures, will be permitted to flow at unlimited flow rates as long as each outlet has a maximum flow rate of 2.5 gpm, can result in serious plumbing system performance concerns in buildings, especially new buildings with properly sized plumbing systems designed for modern water efficient plumbing products and appliances.

The plumbing industry, led by IAPMO, is currently working hard along with academia, public health experts and other stakeholders to address the fact that our plumbing systems are grossly oversized. Oversized plumbing systems contribute to wasted water and energy use, increased water aging and declining water quality in our nation’s buildings.

In response, there are multiple efforts underway to right size our water distribution and premise plumbing systems, employing complex modeling and statistical water use calculations, and which take modern plumbing fixture and appliance flow rates into account. An example is the Water Demand Calculator (WDC)<sup>1</sup>, which was developed in a research program conducted by IAPMO, the American Society of Plumbing Engineers (ASPE), the Water Quality Research Foundation (WQ-RF) and the University of Cincinnati. All of these predictive tools rely on assumptions based on the known flow rates of plumbing fixtures and appliances as currently regulated by EPCA.

Plumbing Codes assume a maximum flow rate (2.5gpm) for a showerhead device to determine the right size for the water piping. The installation of showerhead devices that flow far in excess of those values will cause problems in right sized plumbing systems resulting from excessive flow velocities, including excessive noise and water hammer. Considering that the actual market penetration and installation of such showerheads will be impossible to predict will significantly complicate right sizing efforts. In order to avoid the plumbing systems problems discussed above, the only solution would be to assume the use of high flow rate showerhead devices in all buildings, resulting, once again, in oversized building water supply pipes, building trunk and riser pipes and fixture branch supply pipes to bath and shower fixtures. This would greatly diminish the benefits of all right sizing efforts, some of which are being funded by government grants, and result in

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<sup>1</sup> For additional information on IAPMO’s Water Demand Calculator (WDC) and the benefits it provides, go to: <https://www.iapmo.org/hidden/update-list/iapmo-s-water-demand-calculator-version-20-available-for-download/>



increased water quality concerns in buildings that choose not to install high flow showerhead devices.

High flow showerhead devices will have the potential to produce water flows that typical bath-shower drain fittings may not be able to accommodate. When left unattended, such conditions can result in tub and shower fixture overflows that result in extensive water damage in homes and buildings.

High flow showerhead devices can also deplete hot water from tank type water heaters in a very short period of time, potentially causing thermal shock related slip and fall accidents when hot water runs out while the user is bathing.

Another cause of concern to IAPMO is harm to IAPMO and like-minded U.S. stakeholders in seeding model American codes and standards in developing nations. IAPMO was recently successful in having American standards embedded into the national plumbing standard of Indonesia, resulting in an 80% increase of American plumbing products in that populous nation and thereby strengthening the health and safety of the physical infrastructure of their plumbing systems. In fact, IAPMO was awarded a 2019 e-Commerce award from the Department of Commerce for that accomplishment. IAPMO was able to have those standards referenced in the Indonesian standard partially by explaining to that nation's stakeholders that American standards provide for improved planned growth and development efforts by applying known and regulated usage provisions, allowing for higher levels of efficiency and conservation of resources. The legalization of high flow showerhead devices that can result in the higher use of energy laden, hot potable water will negate the appeal of American National Standards as environmental and energy efficient-positive upgrades over local codes.

We thank the Department for their consideration of our comments.

Respectfully,

A handwritten signature in black ink, appearing to read "Peter DeMarco". The signature is fluid and cursive, written over a white background.

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