

October 19, 2021

**Appliance Standards Awareness Project
Natural Resources Defense Council
Northwest Energy Efficiency Alliance**

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U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-5B
1000 Independence Avenue, SW
Washington, DC 20585-0121

RE: Docket Number EERE-2019-BT-TP-0021: Test Procedures for Consumer Products; Early Assessment Review; Faucets and Showerheads; Request for Information

Dear Mr. Berringer:

This letter constitutes the comments of the Natural Resources Defense Council (NRDC), the Appliance Standards Awareness Project (ASAP), and the Northwest Energy Efficiency Alliance (NEEA) on the Request for Information for test procedures for faucets and showerheads. 86 Fed. Reg. 49261 (September 2, 2021). We appreciate the opportunity to provide input to the Department.

We believe that amended test procedures for faucets and showerheads would more accurately and fully produce results that measure water use, and would not be unduly burdensome to conduct. We recommend that DOE initiate a rulemaking to revise the current test procedures for faucets and showerheads.

Scope

Faucets. We concur in the Department's assessment (86 Fed. Reg. at 49,264) that flow rate standards for pot fillers and low-pressure water dispensers would not be expected to yield water savings, since the volume of water used by such products would be determined by the volume of the vessels being filled. At the present time, we do not recommend establishing test procedures for low-pressure water dispensers or pot fillers.

It is possible, however, that pot fillers could be marketed and installed for use over sinks as a high-flow alternative to a covered kitchen faucet, and as such could constitute a substantial loophole in the standard for kitchen faucets. In that event, the distinction between pot fillers and covered kitchen faucets would diminish to the point that all such products should be subject to the same flow rate standards. To reduce the likelihood of such a development, DOE should consider amending the definition of a kitchen faucet to encompass any terminal fitting designed for discharge into a kitchen sink at a water supply pressure of 20 psi or more.

Showerheads. We concur in the Department’s assessment (86 Fed. Reg. at 49,264) that there is no need to make any updates to the definition of “hand-held showerhead” nor to provide a separate definition for the term “rain shower.”

Updates to Industry Standard

Test procedures for faucets and showerheads would more accurately and fully produce results that measure water use if the Department adopted modifications to some elements of the water consumption test in the revised standard ASME A112.18.1-2018. Unfortunately, the 2018 revisions carried forward deficiencies in earlier versions of the industry standard.

To conduct the flow rate test as described in Section 5.4 of ASME A112.18.1-2018, the flow rate may be determined by one of two methods: a) the use of a fluid meter to measure flow rate; or b) the time/volume method. Neither the accuracy nor the replicability of the flow rate test is assured using either method. The description of the test apparatus is exceptionally sparse, with the text of Section 5.4.2.2 directing the reader to Figure 3. The limited narrative directives for the test set-up consist of subsections (b) relating to pressure tap size and configuration; (c) the installation of a fluid meter, if used, must be as specified in ASME PTC 19.5; and (d) if the time/volume method is used, the container shall be of sufficient size to hold the collected water for at least 1 minute.

The limited guidance provided by the text of Section 5.4 and by Figure 3 leave blank spaces in the test protocol that preclude its ability to ensure accurate and repeatable testing. For testing using a fluid meter, these include –

- No specification of the type of meter acceptable for the test;
- No specification of the normal operating range of the meter and its suitability to the target flow of the test;
- No description of the meter’s register, including incremental units of measurement;
- No requirement for preconditioning of the meter before or between tests.

While ASME PTC 19.5 addresses the installation of flow meters (Chapter 7) and is referenced in Section 5.4 of ASME A112.18.1-2018, none of the missing parameters noted above are specified therein.

For tests using the time/volume method, additional gaps include –

- No required dimensions for the receiving container
- No delineation of either the distance between the specimen and the container nor the orientation of the discharge to the container to preclude the possibility of splashing water escaping the container;
- No guidance on the means of measurement of water collected in the container, including the increments of volume in any container directly read, or, alternatively, the process for deriving the volume by weighing the collected water;
- No guidance on the measuring or recording of elapsed time.

We recommend that DOE examine these deficiencies and supplement ASME A112.18.1-2018 with additional directions that will better ensure the accuracy and repeatability of faucet and showerhead tests. Plugging these gaps in the test procedure is unlikely to render testing unduly burdensome, but would be likely to ensure greater standardization in test procedures and instill greater confidence in test results.

We note that DOE has previously established additional directions for the consensus test procedures for plumbing products (both water closets and showerheads) where such directions are necessary and useful for carrying out the purposes of the Energy Policy and Conservation Act (EPCA). The current test procedure for faucets and showerheads (October 2013 Final Rule) includes the requirement¹ that any container used in the time/volume method be positioned to capture any leakage from the ball joint of the showerhead – a requirement not in ASME A112.18.1. Similar action is called for here.

Potential inaccuracies in faucet and showerhead test results have greater impact when the maximum flow rates required by a standard are lower. On December 22, 2010, DOE published in the *Federal Register* a final rule to waive the general rule of Federal preemption for water use standards, under [42 U.S.C. 6297\(c\)](#), with respect to State regulation of plumbing products. Since that time, and largely after the adoption of the current faucet and showerhead test procedure in 2013, nine states and the District of Columbia, which collectively constitute 27% of the US population, have adopted requirements for showerheads and faucets that are more stringent than federal standards. These standards, fully sanctioned by DOE, rely on accurate and replicable test procedures, and we urge DOE to take this application into account when considering potential improvements in the test procedures for faucets and showerheads.

Showerhead Test Procedure

In addition to the maximum flow rate for showerheads, the standard promulgated under EPCA includes a requirement for retention of flow restricting devices.² This requirement is as much a part of the standard as the maximum flow rate, and yet the retention requirement is not addressed in the test procedure, nor in ASME A112.18.1-2018. DOE considered this issue in 2012-2013, and even developed a draft test of flow restrictor retention, but ultimately reached no conclusion and deferred the issue for a future date. This issue remains important today. Flow restrictors serve a critical function, and their casual removal jeopardizes the effectiveness of the standard and its intended savings of energy and water. We recommend that DOE revisit this issue, and propose a test method for flow restrictor retention that will verify compliance with this important part of the showerhead standard.

¹ “If the time/volume method of [section 5.4.2.2\(d\)](#) is used, the container must be positioned as to collect all water flowing from the showerhead, including any leakage from the ball joint.” § 2, 10 CFR 430 subpart B Appendix S.

² “When used as a component of any such [showerhead](#), the flow-restricting insert shall be mechanically retained at the point of [manufacture](#) such that a force of 8.0 pounds force (36 Newtons) or more is required to remove the flow-restricting insert, except that this requirement shall not apply to [showerheads](#) for which removal of the flow-restricting insert would cause water to leak significantly from areas other than the spray face.” 10 CFR 430.32(p).

Finally, we recommend that DOE clarify that products marketed as body sprays are indeed showerheads subject to the testing, labeling, and performance requirements of all showerheads (except safety showerheads) under EPCA. The California IOUs noted in their comments on the August 2020 NOPR that “body sprays” sold on the market today from major retailers comply with the 2.5 gpm limit and that the ASME 2018 standard treats them like other showerheads. Since products marketed as body sprays may just as easily be installed in an overhead position as in any other position, these products meet the statutory definition of showerhead, i.e., “showerheads” spray water “typically from an overhead position.” However, the use of “typically” may leave ambiguity for products that spray from another position or from multiple positions, depending simply on installation. Adoption of the provision of DOE’s July 2021 NOPR that proposed withdrawal of the 2020 definition of body spray³ would create a strong inference that products marketed as body sprays are to be treated as showerheads under EPCA. However, we recommend that this determination rest on more than inference. DOE should make clear that the products which DOE describes as “body sprays” are showerheads and must meet the showerhead standard.

Thank you for your attention to these views.

Respectfully submitted,



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³ “A body spray is not a showerhead.” 85 Fed. Reg. 81341, 81359.