ASME A112.19.14-2013
[Revision of ASME A112.19.14-2006 (R2011)]

Six-Liter Water Closets Equipped With a Dual Flushing Device

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: January 21, 2014

This Standard will be revised when the Society approves the issuance of a new edition.

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The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

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FOREWORD

In 1992, the Federal Energy Policy Act was enacted into law by Congress. This Act not only addressed energy issues but also included criteria for water conservation products in the United States that became effective in January 1994. As a complement to the enactment of this Act, the plumbing industry had already developed numerous water-efficient plumbing products that improved the performance of 1.6 gal per flush water closets.

One recent advance in the development of water closets is the use of dual flush technology that allows the consumer to flush with either a short flush, 1.1 gal (4.1 L) or less, or a long or full 1.6 gal (6 L) flush or less, depending upon need. This Standard addresses the performance of these products.

This Standard establishes test criteria for 1.6 gal (6 L) dual flush water closets. It was prepared by an ad hoc committee from the International Association of Plumbing and Mechanical Officials (IAPMO). It was then referred to ASME and assigned to the A112 Project Team 19.14. It was subsequently reviewed and approved by the ASME A112 Standards Committee.

The 2006 revision updated the reference to ASME A112.19.6 due to it being discontinued and its requirements included in ASME A112.19.2. Additionally, a typographical error in para. 3.2.5.1 pertaining to the size of the toilet paper was corrected, para. 3.2.3.1(c) was revised to reduce the amount of water to which the dye solution has to be added to achieve a control sample of 17:1, and para. 3.2.3 (Rim Wash Test) was deleted. This test was deleted because it is more appropriate for a full flush rather than a short flush.

This revision updates the designator for the two referenced standards, brings this Standard in line with the harmonized ASME A112.19.2/CSA B45.1 standard that does not require the designation of the standard on a label affixed to the product, and updates the test media to allow the use of toilet paper with sheets of an equivalent surface area.

Suggestions for the improvement of this Standard are welcome. They should be addressed to The American Society of Mechanical Engineers, Secretary, A112 Standards Committee, Two Park Avenue, New York, NY 10016-5990.

This Standard was approved as an American National Standard on December 12, 2013.

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Standardization of Plumbing Materials and Equipment

(The following is the roster of the Committee at the time of approval of this Standard.)

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General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

Secretary, A112 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Interpretations. Upon request, the A112 Standards Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the A112 Standards Committee at go.asme.org/Inquiry.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings, which are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The A112 Standards Committee regularly holds meetings, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the A112 Standards Committee. Future Committee meeting dates and locations can be found on the Committee Page at go.asme.org/A112committee.

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.

The use of alternate materials or methods is permitted, provided that the proposed material and method comply with the performance requirements and the intent of this Standard.

1.2 Units of Measurement

Values are stated in U.S. Customary units and the International System of Units (SI). The U.S. Customary units shall be considered as the standard.

1.3 Reference Standards

The following documents form a part of this Standard to the extent specified herein (the latest issue shall apply):

ASME A112.19.2/CSA B45.1, Ceramic Plumbing Fixtures

Publisher: The American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900 (www.asme.org)

CSA B45.5/IAPMO Z124, Plastic Plumbing Fixtures

Publisher: International Association of Plumbing and Mechanical Officials (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761 (www.iapmo.org)

1.4 Definitions

dual flush: a feature that allows the user to flush the water closet with either a reduced or full volume of water depending upon bowl contents.

low-consumption water closet: a water closet having an average water consumption (total flush volume) less than or equal to 1.6 gal (6 L) over the range of test pressures as specified in ASME A112.19.2/CSA B45.1 for each water closet type, and not exceeding 2 gal (7.6 L) at any one test pressure (based upon average values from the three-run test).

2 REQUIREMENTS

2.1 Operation

The dual flush mechanism shall function by actuation and release of the selector control, switch, or handle and shall complete its cycle without requiring further action or holding by the user.

2.2 Water Closets

Water closets equipped with dual flush features shall conform to the requirements of ASME A112.19.2/CSA B45.1 or CSA B45.5/IAPMO Z124.

3 TESTING

3.1 Full Flush Mode

Water closets equipped with dual flush features shall meet all the requirements of ASME A112.19.2/CSA B45.1 for low consumption water closets when the full flush volume is activated.

3.2 Reduced Flush Mode

3.2.1 Trap Seal Restoration Test. The water closet as tested in paras. 3.2.2 through 3.2.4 shall also meet the performance requirements of para. 7.3 of ASME A112.19.2/CSA B45.1.

3.2.2 Reduced Flush Volume Test. The reduced flush volume shall not exceed 1.1 gal (4.1 L) per flush when tested in accordance with para. 7.4 of ASME A112.19.2/CSA B45.1. This testing shall be conducted before the durability testing in para. 3.2.5. The same testing shall be conducted after the durability testing in para. 3.2.5 and the reduced volume shall not vary more than 0.11 gal (0.41 L).

3.2.3 Dye Test

3.2.3.1 Test Method

(a) 0.18 oz (5 g) of methylene blue powder shall be added to 0.26 gal (1 L) of water and mixed thoroughly in a clean container.

(b) The water closet under test shall be flushed once and allowed to complete its filling cycle. One fluid ounce