



**Summary of Substantive Changes  
between the  
2008 edition, including Updates No. 1 and No. 2 dated August 2009 and March 2011,  
and the  
2013 edition, including Update No. 1 dated October 2013,  
of  
ASME A112.19.2/CSA B45.1 “Ceramic plumbing fixtures”**

**Presented to the IAPMO Standards Review Committee on December 9, 2013**

**General:** The changes to this standard will have an impact on currently listed products. The substantive changes are:

- Added requirements for fill valves and tank capacity for gravity flush tanks (see Sections 5.2.5 and 5.2.6).
- Revised the procedure for conducting the field-installed tiling-flange seal test to make it consistent with the procedure in CSA B45.5/IAPMO Z124 (see Section 6.5.1).
- Decreased the hydrostatic pressure for the joint seal test from 100 kPa (15 psi) to 34.5 kPa (5 psi) (see Section 6.9).
- Clarified the water closet tests intended for high-efficiency gravity tank toilets only (see Section 7.1.2 and Table 5)
- Reduced the polypropylene ball weight from 298 g to 3.0 g for the drain line transport characterization test (see Section 7.8.1).
- Added water closet tests (see Sections 7.10 to 7.14) and clarified that the tests in Sections 7.13 and 7.14 are applicable to high-efficiency toilets only.
- Added waste outlet dimensions for showers (see Figure 1).
- Added wall-hung water closet dimensions (see Figure 3).

Section 5.2, Gravity flush tanks: Added requirements for the water closet fill valves and water closet tank capacity as follows:

**5.2.5 Water closet fill valve**

*The water closet fill valve shall be the pilot valve type only or, alternatively, the fill valve shall meet the performance requirements of the fill valve test protocol in Clauses 7.11 and 7.12.*

**5.2.6 Water closet tank capacity**

*Any barrier, bucket, dam, displacement device, or similar fixture used in a water closet tank to affect flush volume shall be tamper-resistant and permanently affixed to the tank. Any device that can be tampered with or removed such that the water closet can be made to flush with greater than the maximum flush volumes specified in Clauses 7.13 and 7.14 shall be deemed noncompliant.*



Section 6.5, Field-installed tiling-flange seal test: Changed the field installed tiling-flange seal test procedure, to make it consistent with the procedure in CSA B45.5/IAPMO Z124, as follows:

#### 6.5.1 Procedure

The tiling-flange seal test shall be conducted as follows:

- (a) Set up the specimen ~~Install the flange~~ in accordance with the manufacturer's instructions.
- (b) Apply a continuous water spray to the flange seal at the joint with the fixture as follows ~~Expose the flange seal at the joint with the fixture to a continuous water spray:~~
  - (i) using a 30° full jet spray nozzle;
  - (ii) for 30 min ~~for 15 to 20 min;~~
  - (iii) from a distance of 1.2 m (4 ft) from the face of the spray nozzle;
  - (iv) at an angle of 45°;
  - (v) at a flow rate of 11.4 L/min (3.0 gpm) ~~Use a shower spray with a flow rate of 9.0 ± 0.5 L/min (2.38 ± 0.13 gpm); and~~
  - (vi) at a temperature of 40 ± 5 °C (104 ± 9 °F) ~~a water temperature of 38 ± 3 °C (100 ± 5 °F).~~
- (c) Inspect the specimen for water transmission ~~leakage~~ through the joint to the back of the flange.  
Note: Full Jet®, narrow angle 30° series, part No. 1/2 GG 3030, manufactured by Spraying Systems Co., North Avenue at Schmale Road, P.O. Box 7900, Wheaton, IL, 60189, has been used for this test.

Section 6.9, Joint seal test: Decreased the hydrostatic pressure from 100 kPa (15 psi) to 34.5 kPa (5psi) as follows:

#### 6.9 Joint seal test

Joints shall be made in accordance with the manufacturer's instructions and subjected to a hydrostatic pressure of ~~100 kPa (15 psi)~~ 34.5 ± 3.4 kPa (5 ± 0.5 psi) for 15 min. There shall be no evidence of leakage.

Section 7.1.2, Gravity flush tank water closets: Clarified the water closet tests intended for high-efficiency gravity tank toilets only as follows:

...The test methods and performance requirements specified in Clauses 7.13 and 7.14 shall apply to high-efficiency gravity tank toilets only.

Section 7.8, Drain line transport characterization test:

Section 7.8.1, Test medium: Reduced the polypropylene ball weight from 298 g to 3.0 g and removed the density requirement as follows:

The test medium shall consist of 100 polypropylene balls with the following characteristics:

- (a) weight: ~~298 ± 10 g (10.5 ± 0.35 oz)~~ 3.0 ± 0.2 g (0.105 ± 0.007 oz); and
- (b) diameter: 19 ± 0.4 mm (0.75 ± 0.02 in);
- ~~(c) density: 833 ± 16 kg/m<sup>3</sup> (52 ± 1 lb/ft<sup>3</sup>).~~

The water closet tests listed below were added. Update No. 1 clarifies that the tests in Sections 7.13 and 7.14 are applicable to high-efficiency toilets only.

[7.10 Waste extraction test](#)

[7.11 Consistent water level test](#)

[7.12 Fill valve shutoff integrity test with increased water pressure](#)

[7.13 Adjustability test for tank-type gravity water closets with original equipment](#)

[7.14 Adjustability test for tank-type gravity water closets with aftermarket closure seals](#)



Section 8.2, Test apparatus and general instructions:

Section 8.2.1: Reduced the minimum pressure at which to record the peak flow rate while conducting the water consumption testing from 350 to 175 kPa as follows:

*(e) Record the peak flowing pressure at gauge 10 and the peak flow rate through the flushometer valve while it is attached to the urinal. While conducting water consumption testing at ~~350~~ 175 and 550 kPa (~~50 25~~ and 80 psi), maintain the peak flow rate at  $\pm 4$  L/min ( $\pm 1$  gpm) by adjusting valve 9 as necessary. The temperature of the water shall be 18 to 27 °C (65 to 80°F).*

Section 9.3, Additional markings for water closets and urinals:

Section 9.3.2, Water consumption: Added marking requirements for flushometer bowls and revised the marking requirements for some urinals and water closets as follows:

*(e) ~~13.2 Lpf (3.5 gpf) for water saving water closets.~~ Flushometer bowls, urinals, and bowls for close-coupled toilets shall be marked accordingly as indicated in Items (a) to (d). When also tested to be used with tanks or valves with lower consumption levels, the option of including the words "or less", a dual consumption marking, or a consumption range may be used*

Table 5, Static test pressures for water closets, kPa (psi): Added the static test pressures for the new water closet tests in sections 7.10 to 7.14 and clarified that the tests in Sections 7.13 and 7.14 are applicable to high-efficiency toilets only.

Figure 1, Waste outlet dimensions: Added a figure showing shower waste outlet dimensions.

Figure 3, Outlet dimensions for rear-outlet and rear-spigot-outlet water closet bowls: Added wall hung water closet dimensions.