1. SCOPE AND PURPOSE

1.1 This Standard covers non-metallic fixtures such as shower receptors, shower stalls, lavatories, sinks, bathtubs, and step tub/shower combination waste holding tanks intended for use in manufactured housing and recreational vehicles (e.g., trailers) and specifies requirements for materials, physical characteristics, performance tests, and markings and identification.

1.2 The purpose of this Standard is to enhance health and safety by:
(a) specifying minimum acceptable criteria for non-metallic fixtures;
(b) serving as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors, and users; and
(c) promoting understanding regarding materials and manufacturing of non-metallic fixtures.

1.3 The requirements of this Standard are not intended to prevent the use of alternative materials or methods of construction provided such alternatives meet the intent of this Standard.

1.4 Amendments to this Standard will be processed according to the standards writing procedures of IAPMO.

2. REFERENCE PUBLICATIONS

This Standard refers to the following publications, and where such reference is made, it shall be to the current edition of those publications, including all amendments published thereto.

ASME A112.19.2/CSA B45.1 Ceramic Plumbing Fixtures
CSA B45.5/IAPMO Z124 Plastic Plumbing Fixtures
IAPMO TS 2 Waste Holding Tanks
IAPMO UPC Uniform Plumbing Code
3. GENERAL REQUIREMENTS

3.1  **Shower Receptor and Shower Stall Dimensions**

3.1.1  Shower receptors and shower stalls which encompass a diameter of 760 mm (30 in) or more, measured when the door or curtain is closed, and have a minimum horizontal cross-sectional area of 0.66 m² (1,024 in²) shall comply with the shower stall requirements specified in Sections 411.4 to 411.7 of the UPC.

3.1.2  Shower receptors and shower stall floors shall have a
(a) minimum area of 0.15 m² (240 in²); and
(b) clear standing space of not less than 305 mm (12 in) in its smallest dimension, measured at a height equivalent to the top of the threshold.

3.1.3  Shower stalls shall have a
(a) cross-sectional area of not less than 0.26 m² (400 in²); and
(b) minimum dimension of 510 mm (20 in) measured at a height equivalent to the top of the threshold.

3.1.4  Shower receptors and shower stalls shall have a depth between 50 and 230 mm (2 and 9 in), measured from the top of the threshold to the top of the drain.

3.2  **Bathtub Dimensions**

3.2.1  The distance between the wall surfaces of bathtubs shall be at least 460 mm (18 in) measured at a height of 50 mm (2 in) above the horizontal seating area.

3.2.2  The floor area of bathtub shall be at least 0.39 m² (600 in²).

3.2.3  Bathtubs shall have a minimum depth of 230 mm (9 in) measured from the top of the entry dam to the top of the drain outlet.

3.3  **Step Tub/Shower Dimensions**

3.3.1  Minimum dimensions for step tub/showers seats shall be 460 × 190 mm (18.0 × 7.5 in) (width by length) measured at the vertical wall surface above the horizontal seating area.

3.3.2  The minimum dimensions of the floor (standing space) for step tub/showers shall be 410 × 610 mm (16 × 24 in) or 0.25 m² (384 in²).

3.4  **Drainage and Slope**

3.4.1  Waste fitting openings (outlets) shall comply with the applicable requirements of CSA B45.5/IAPMO Z124.

3.4.2  Except for lavatories and sinks, the floor of fixtures with flat bottoms shall slope uniformly to the drain with a gradient between 21 and 42 mm/m (0.25 and 0.50 in/ft).
3.5 Thresholds

3.5.1 Plumbing fixtures shall have a dam, curb, threshold, or overflow at least 25 mm (1 in) lower than the sides and back of the fixture. The threshold shall extend outward at least 25 mm (1 in) and shall be either an integral part of the fixture or a separate cap. The threshold or cap shall be able to withstand standing loads. Dams, curbs, thresholds, and horizontal surfaces adjacent to the nailing flanges shall be designed with a slight slope to permit drainage of water back into the fixture.

3.5.2 Shower door frames shall not be considered an extension of the finished threshold.

3.6 Structural Integrity

Fixtures shall comply with the applicable structural integrity requirements of CSA B45.5/IAPMO Z124.

3.7 Watertightness

Fixtures shall be manufactured so that, when assembled, a watertight joint between the enclosure walls and fixture will result.

3.8 Overflows

Overflows in lavatories may be provided at the option of the manufacturer.

4. MATERIAL REQUIREMENTS

4.1 Holding Tanks

Each holding tank portion of tank/shower combinations shall be made of reinforced fiberglass, thermoplastic, or a similar material not subject to corrosion and shall comply with the requirements of IAPMO TS 2 with the exception of the marking requirements.

4.2 Bathtubs

Bathtubs shall comply with all applicable requirements of CSA B45.5/IAPMO Z124 except for the ignition test.

4.3 Shower receptors and stalls

Shower receptors and stalls shall comply with all applicable requirements of CSA B45.5/IAPMO Z124 except for the ignition test.

4.4 Lavatories and Sinks

4.4.1 Plastic lavatories shall comply with the requirements of CSA B45.5/IAPMO Z124.

4.4.2 Plastic sinks shall comply with the requirements of CSA B45.5/IAPMO Z124.

4.4.3 Vitreous china lavatories shall comply with the requirements of ASME A112.19.2/CSA B45.1.
4.5 Integral shower and tub walls

4.5.1 Shower and tub walls shall be made of materials whose flame spread classification does not exceed 200 when tested in accordance with ASTM E162.

4.5.2 Wall surrounds which are integral with the tub/shower enclosure at installation shall meet the requirements of Section 4.6.1 and the applicable sections of CSA B45.5/IAPMO Z124.

5. OPENINGS AND CONNECTIONS

5.1 Openings
All openings, other than toilet connections, threaded vents, or shower receptor strainer openings, shall be located above the threshold level.

5.2 Toilet Connections
Toilet connections shall be at least 75 mm (3 in) to accommodate a nominal 3-in iron pipe size and shall extend vertically. The inlet may be integrated with a standard closet flange.

6. MARKINGS

6.1 General
Non-metallic fixtures complying with this Standard shall be marked with the:
(a) manufacturer's name or trademark; and
(b) model number.

6.2 Marking Characteristics and Decals

6.2.1 Markings shall be permanent, legible, and visible after installation.

6.2.2 When decals are used, one decal shall be glassed over and placed on the underside of the fixture, adjacent to the drain opening and the second one shall be removable and placed on the interior.

6.2.3 When a non-metallic fixture has engraved markings on the exposed interior finished surface, no additional decals or markings shall be required.

Adopted: 1964