Plumbing system components for recreational vehicles

11 Mechanical seal toilets

11.1 Scope

Mechanical seal toilets covered by this Section are to be connected to the potable water system and the sanitary drainage system in recreational vehicles.

11.2 Materials

Vitreous china shall comply with requirements of ASME A112.19.2M. Plastics, if used, shall comply with the requirements of ANSI Z124.4, except Section 4 (Structural Strength and Integrity) and section 5.3 (Wear and Cleanability). Metals shall be corrosion resistant.

11.3 Design and construction

11.3.1 Bodywaste outlet and passages shall be sized to pass a 2-¾-in (69.9-mm) diameter ball, and have impervious surfaces. They shall be free of obstructions, recesses, or chambers that permit fouling. The mechanical seal and seat shall have leakproof seals.

11.3.2 Fixture bases shall be mounted on acceptable closet flanges with gaskets to provide gas- and watertight seals.

11.3.3 Flushing mechanisms shall insure adequate cleansing of interior surfaces during flushing cycle at minimum operating pressures.

11.3.4 At least 1 in (25.4 mm) of water shall be retained in the bowl after flushing.

11.3.5 A single control shall be used for flushing and refilling.

11.3.6 The mechanical seal mechanism shall withdraw completely from the path of waste discharge during flushing.

11.3.7 The water flushing mechanism and components shall be accessible for adjustment, repair, and replacement.

11.3.8 An overflow in the toilet shall be optional when the toilet is equipped with an inlet opening at least nominal 2 in (12.7 mm) in diameter. The overflow line shall be at least a nominal 2-in diameter or less, if the diameter will take full discharge of supply valve, and form a trap with a seal at least 2 in (50.8 mm) deep and be accessible for cleaning. The trap may have a drain fitting. The overflow outlet shall discharge beneath the mechanical seal. A portion of the water in the overflow trap shall be replaced with fresh water at each flushing.
11.3.9 The toilet shall have an acceptable backflow preventer installed on the discharge side of the last control valve in the supply line, and be protected from physical damage and contamination.

11.4 Performance

11.4.1 The toilet shall operate at a minimum flow pressure of 8 psig (55.2 kPa) and a maximum static pressure of 100 psig (690 kPa).

11.4.2 During flushing, a clean bowl shall be completely covered with a film of water 1.5 in (38.1 mm) below the flushing rim.

11.4.3 The toilet shall be subjected to 1000 continuous cycles at a minimum of 20 psi (138 kPa) static pressure without failure.

11.4.4 Toilet bowls shall not lose more than 10 percent of water volume when operated according to the manufacturer's instructions and tested at 73 °F ± 3 °F (23 °C) for at least 24 h.

12 Self-contained, recirculating, chemically controlled toilets

12.1 Scope

Toilets covered by this section are self-contained, electrically operated, recirculating, and chemically controlled for use in recreational vehicles.

12.2 Applicable standards

Toilets covered by this Section shall comply with IAPMO TS 12.

12.3 Materials

Vitreous china shall comply with requirements of ASME A112.19.2M. Plastics, if used, shall comply with the requirements of ANSI Z124.4 where Section 4 (Structural Strength and Integrity) and section 5.3 (Wear and Cleanability) are not applicable.

12.3.4 Marking and identification

Toilets shall be clearly and permanently marked with the following:

- manufacturer's name; and
- model number.