



**Summary of Substantive Changes  
between the 2014 and the 2008 editions  
(including Updates No. 1 through No. 5 dated June 2008, December 2008, September 2009,  
March 2011 and September 2011) of  
CSA Z240.3.2 “Plumbing requirements for recreational vehicles”**

**Presented to the IAPMO Standards Review Committee on May 4, 2015**

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

- Removed the requirement to waterproof the floor at least 150 mm (6 in) around the water closet (see Section 4.1.4)
- Added a new requirement for glazed shower doors and enclosures (see Section 4.1.8)
- Changed the requirement for protecting components against road damage (see Section 4.7.2 and Figure 2)
- Removed the specifications for venting mechanically sealed toilets (see Section 7.6.4)
- Changed the vent systems requirements (see Sections 8.4 and 8.5)
- Removed the allowance for single-occupant shower drain and water closet drain piping direct connection without additional venting (see Section 8.7)
- Clarified the procedure for conducting the water distribution system pressure test and added new testing for PVC and CPVC systems and demand systems that do not have city water connections (see Section 9.1)
- Changed the drain waste and vent system and shower stall tests (see Section 9.2)
- Changed the maximum distance from trap to vent for NPS-1-1/4 and NPS-1-1/2 from 1.5 m (5 ft) to 1.37 m (4.5 ft) (see Table 2)

Section 4.1.4, Floor connection: Removed the requirement to waterproof the floor at least 150 mm (6 in) around the water closet as follows:

*Water closets shall be rigidly bolted to the closet flange, and when screw holes are provided, the bowl shall also be solidly fastened to the floor. ~~The floor under the water closet and at least 150 mm (6 in) around the fixture shall be made impervious to moisture.~~*

Section 4.1.8, Shower doors and tubs: Added a new requirement for glazed shower doors and enclosures as follows:

*Shower doors and tubs and shower enclosures, if glazed, shall conform to ANSI Z97.1.*

Section 4.7.2, Road damage: Changed the requirement for protecting components against road damage from a numerical distance to a geometric determination based on a figure as follows:

*Pipes, supports, drains, outlets, and drain hoses shall not extend or protrude in a way that could cause them to be damaged during transit. ~~Drainage piping or fittings located less than 450 mm (18 in) behind the tires or closer than 200 mm (8 in) to the ground (with the vehicle in a level position) shall be suitably protected from damage.~~ Drain terminations and other plumbing components protruding below the plane*



*formed by the rear axle to road interface and the rear bumper and frame shall be protected from contact with the road. (See Figure 2).*

Section 7.6.4, Vent connector: Removed the specifications for venting mechanically sealed toilets as follows:

~~*When a mechanically sealed toilet is used and is equipped with an integral vent in the base below the mechanical seal, the waste holding tank need not be vented.*~~

Section 8.4, Vent systems (other than wet vent systems): Removed specifications for the maximum number of fixtures allowed for an NPS-1-1/4 and NPS-2 vent and added a requirement for individually vented fixtures with 1-1/2 in (38 mm) or smaller water seal traps as follows:

8.4.1

*Vent pipes shall not be smaller than NPS-1-1/4.*

8.4.2

~~*An NPS-1-1/4 vent shall serve not more than two fixture traps (excluding a water closet) Unless protected by an anti-siphon trap device, a 1-1/4 in (32 mm) minimum diameter vent pipe shall be used for all individually vented fixtures with 1-1/2 in (38 mm) or smaller water seal traps.*~~

8.4.3

~~*An NPS-1-1/2 vent shall serve not more than four fixture traps, one of which may be a water closet An NPS-1-1/2 vent shall serve not more than four fixture traps, one of which may be a water closet.*~~

8.4.4

~~*An NPS-2 vent shall serve not more than six fixture traps, two of which may be water closets.*~~

Section 8.5, Wet vent systems: Changed the requirements for wet vent systems as follows:

8.5.3

~~*An NPS-1-1/4 lavatory waste pipe may serve as the wet vent for an NPS-1-1/2 fixture trap. A wet-vented drain pipe shall be at least one pipe size larger than the largest required water seal trap.*~~

8.5.4

~~*An NPS-1-1/2 waste pipe for an NPS-1-1/2 fixture trap may serve as the wet vent for one other NPS-1-1/2 fixture trap. Not more than three fixtures shall be permitted to connect to a wet-vented drain system.*~~

8.5.5

~~*A waste pipe that is not less than NPS-2 to the uppermost trap arm connection may serve as the wet vent for a water closet and not more than three other fixture traps. Fixtures shall not be wet vented by a water closet drain.*~~

8.5.5.1

*The trap arm for each flush toilet shall be vented by a 38 mm (1-1/2 in) minimum diameter vent or rectangular vent of venting cross section equivalent to or greater than the venting cross section of a 38 mm (1-1/2 in) diameter vent connected to a trap arm within the distance outlined in Table 2 for 76 mm (3 in) trap arms.*

8.5.5.2

*The connection for venting shall be accomplished by one of the following methods:*

*a) a 38 mm (1-1/2 in) minimum diameter individual vent pipe connected to the trap arm and extended undiminished in size through the roof; or*



*b) a 38 mm (1-1/2 in) minimum diameter continuous vent indirectly connected to the toilet drain pipe through a 51 mm (2 in) wet-vented drain.*

#### 8.5.6

*Trap arms shall connect separately and individually to the wet vent.*

Section 8.7, Combination compartment drain: Removed the allowance for single occupant shower drain and water closet drain piping direct connection without additional venting as follows:

~~*When a water closet is located in a shower stall that is limited by its size to use by one occupant at a time, the trap branch from the shower drain may be directly connected to the water closet drain piping without additional venting.*~~

Section 9.1, Water-distribution system: Clarified the procedure for conducting the water distribution system pressure test and added new testing for PVC and CPVC systems and demand systems that do not have city water connections as follows:

#### 9.1 Water-distribution system

##### 9.1.1

~~*Except for gravity-type distribution systems, all water piping in water-distribution systems shall be subjected to a pressure test before any portion is covered or concealed. The test shall be performed by subjecting the system to air or water at 690 kPa (100 psi) for 10 min, during which period there shall be no leakage or loss of pressure. An accurate pressure gauge shall be used for all tests. All pressure water piping in the water-distribution system shall be tested to twice the maximum setting of the pressure regulator (if provided as standard equipment). Failure of the system when subjected to air pressure shall not be considered a failure unless the system also fails when subjected to water pressure.*~~

~~*Note: The water pressure test should be used for units that use storage tank type water heaters in the water system. If the air pressure test is used, the water heater tank should be bypassed or disconnected from the water supply system during the test.*~~ *The test shall be performed by subjecting the pressurized water piping system to either air or water pressure for 10 min without leakage or loss of pressure in accordance with Clause 9.1.2 or 9.1.3.*

##### 9.1.2

~~*A system pressurized by demand pump only shall be tested at twice the maximum discharge pressure of the pump.*~~ *The entire piping system shall be filled with water and pressure tested with air or water at 551 kPa to 689 kPa (80 psi to 100 psi). The entire piping system shall include the hot water storage tank and the pressurized potable water storage tank.*

##### 9.1.3

~~*A recreational vehicle employing a drainage system permitted by Clause 4.4.1.1 shall be tested for at least 3 min.*~~ *The water heater storage tank and the pressurized potable water storage tank shall be removed from the piping system, and the remaining piping system shall be pressure tested with air at 551 kPa to 689 kPa (80 psi to 100 psi).*

##### 9.1.4

*PVC and CPVC system shall be permitted to be tested to the manufacturer's recommended test procedure.*

##### 9.1.5

*Vehicles with demand systems that do not have city water connections shall be permitted to be tested by subjecting the system to air or water pressure equivalent to the maximum discharge pressure of the pump for a period of 10 min without leakage or loss of pressure.*



Section 9.2 Drain waste and vent system and plumbing fixtures: Changed the drain waste and vent system and shower stall tests as follows:

#### 9.2.1 General

##### 9.2.1.1

~~The waste and vent system shall be tested for evidence of leakage using one of the following methods:~~subjected to one of two tests described in Clauses 9.2.1.2 through 9.2.1.3 without evidence of leaks.

~~(a) Flood level test: the recreational vehicle shall be in a level position. All fixtures shall be connected, and the entire system shall be filled with water to the flood level rim of the toilet bowl (tub and shower drains should be plugged). After all trapped air has been released, the test shall be sustained for at least 10 min. The waste pipe above the level of the toilet shall be tested and show no evidence of leakage when the high fixtures are filled with water and emptied simultaneously to obtain the maximum possible flow in the drain piping.~~

##### 9.2.1.2

~~(c) Water test: before plumbing fixtures are connected, all of the openings into the piping shall be plugged and the entire piping system subjected to a static water test for 10 min by filling it with water to the top of the highest vent opening without leakage or loss of water column.~~Before plumbing fixtures are connected, all the openings into the piping shall be plugged and the entire piping system subjected to a static water test for 15 min by filling it with water to the top of the highest vent opening..

##### 9.2.1.3

~~(b) Air test: after all fixtures have been installed, the traps filled with water, and the remaining openings securely plugged, the entire system shall be subjected to a 40 mm (1.6 in) (manometer) water column pressure test for 10 min without leakage or loss of pressure.~~

~~Note: Traps should be cleared of water after testing.~~

After all other fixtures have been installed, the seal traps filled with water, and the remaining openings securely plugged, the entire system shall be subjected to a 2 in (51 mm manometer) water column air pressure test.

#### 9.2.2 Shower stall test

~~Shower stalls shall be filled with water to the top of the dam and after 10 min inspected for leaks.~~

##### 9.2.2.1 Testing procedures

The body waste holding system shall be subjected to a static water test for 115 min by filling the system with water to a level above the connection to the toilet to the toilet flange without evidence of leaks.

Table 2, Maximum distance from trap to vent: Changed the maximum distance from trap to vent for NPS-1-1/4 and NPS-1-1/2 from 1.5 m (5 ft) to 1.37 m (4.5 ft).

The following figure was added:

[Figure 2, Examples of typical vent systems](#)