Summary of Substantive Changes
between the 2014 and the 2014 editions of

ANSI Z21.10.1 ● CSA 4.1, "Gas water heaters volume I, storage water heaters with input ratings of 75,000 Btu per hour or less"

Presented to the IAPMO Standards Review Committee on February 9, 2015

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

- Added new requirements for venting Categories II through IV and direct vent water heaters (see Section 4.1)
- Added new requirements for condensate systems and additional construction requirements for the disposal of condensation for Categories II and IV water heaters (see Section 4.24)
- Added requirements to include additional installation instructions for Category II and IV appliances (see Section 4.33)
- Added new marking requirements for Categories I through IV appliances and water heaters tested with listed B vent or vent connectors (see Section 4.34)
- Added performance requirements for Categories I through IV water heaters (see Section 5.1)
- Revised the required clearances for Canadian and U.S. installations (see Figures 2-A and 2-B)

Section 3 Definitions: Added a definition to for water heater Categories I through IV as follows:
Water heater — water heaters of other than natural draft direct vent type, for installation in manufactured homes (mobile homes), for installation in recreational vehicles, or for outdoor installation are divided into four categories based on the static pressure produced in the vent and the flue loss.
Category I — a water heater that operates with a non-positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.
Category II — a water heater that operates with a non-positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the vent.
Category III — a water heater that operates with a positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.
Category IV — a water heater that operates with a positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the vent.

Section 4.1, General construction and assembly: Added new construction requirements for venting Categories II through IV and direct vent water heaters as follows:
4.1.24
A Category II, III, IV, or direct vent water heater shall be provided with the means for venting the vent gases to the outdoors unless the necessary parts to accomplish this are either of specified types listed by a nationally recognized testing agency, or have been evaluated for use on the water heater under this Standard, and the water heater manufacturer's instructions and marking identify and specify the use of such specific parts. [See Clause 4.33.1(b)(xix)(4)].*
** Means for venting may be accomplished by a method controlled by the manufacturer that shall result in both the water heater and the venting means being available at the time of installation.*

Section 4.24, Condensate disposal: Added new requirements for condensate systems and additional construction requirements for the disposal of condensation for Categories II and IV water heaters as follows:

4.24 Condensate disposal

4.24.1

On a Category II or IV water heaters, means shall be provided for the collection and disposal of condensate.

4.24.2

A venting system supplied with a Category II or IV water heater shall have means provided for the collection and disposal of condensate.

4.24.3

A condensate trap(s), if necessary for compliance with Clause 5.33, Condensate disposal system, shall be supplied with the water heater and/or vent system along with instructions for proper installation and routine maintenance.

4.24.4

Condensate drain line(s) shall not be adversely affected by the composition of the condensate and suitable for the temperatures to which they are exposed.

4.24.5

Where a condensate neutralizer is provided, either an overflow directed to the drain or means to shut down the appliance shall be provided in the event the neutralizer becomes blocked.

Section 4.33, Instructions: Added requirements to include additional installation instructions for Categories II and IV appliances as follows:

4.33.1

Each water heater shall be accompanied by clear, concise printed instructions and diagrams, stated in terms clearly understandable to the consumer and adequate for the proper field assembly, installation, maintenance, safe use, and operation of the appliance

…

The instructions shall include:

a) Assembly instructions for field-installed parts and components, including all controls and accessories (when applicable).

b) Installation instructions indicating:

…

viii) Proper venting requirements for new and pre-existing vent systems.

ix) For Category II and IV appliances, the following statement:

The vent for this appliance shall not terminate:

- *1) over public walkways;*
- *2) near soffit vents or crawl space vents or other areas where condensate or vapor could create a nuisance, hazard, or cause property damage; or*
- *3) where condensate vapor could cause damage or could be detrimental to the operation of regulators, relief valves, or other equipment.*

x) For water heaters for other than recreational vehicle installation,…

Section 4.34, Marking: Added new marking requirements for appliances under Categories I through IV, and water heaters tested with listed B vent or vent connectors as follows:

4.34.2

Rating plate(s). Each water heater shall bear a plate, or a combination of adjacent plates, of Class IIIA marking material, located so as to be easily read when the appliance is in a normally installed position, on which shall appear the following:

a) The class of product shall be marked…

…

t) Symbol of the organization making the tests for compliance with this Standard.

u) Category of water, as applicable:

i) "Category I" (Fan Assisted or Natural Draft);

ii) "Category II";

iii) "Category III"; and

iv) "Category IV".

The above marking is not required for direct vent water heaters, water heaters for installation in manufactured homes (mobile homes), water heaters for installation in recreational vehicles, or water heaters for outdoor installation.

4.34.11

Water heater installation locations and clearances for safety and serviceability shall be clearly marked on the rating plate, or on a separate label of Class IIIA marking material that can be easily read when the appliance is in a normally installed position, in substance as follows:

a) If the clearances from the walls during the performance…

…

i) A water heater tested with a listed B vent or vent connector shall be provided with a Class V marking in a location conspicuous prior to the installation clearly indicating the specific type of vent or vents with which the water heaters is to be used.

** This letter height and line spacing correspond to 10-point type, 2-point leaded.*

4.34.28

Markings for water heaters installation

The following marking (as applicable) shall be affixed to the water heater on Class III marking materials (unless otherwise noted):

A water heater requiring special vent or marked Category II, III, or IV shall bear a marking that states: "This water heater requires a special venting system. Refer to the installation instructions for parts list and method of installation."

Section 5, Performance: Added performance requirements for Categories I through IV water heaters as follows:
Section 5.1, General
5.1.17
Special performance provisions applicable to Category I, Category II, Category III, and Category IV water heaters are outlined under Clauses 5.6, Category determination, 5.32, Venting systems for Category II, III, or IV water heaters, and 5.33, Condensate disposal system(s).

5.6 Category determination

5.32 Venting systems for Category II, III, or IV water heaters

Figures: Revised the required clearances for Canadian and U.S. installations.
Figure 2-A, Direct vent terminal clearances
Figure 2-B, Other than direct vent terminal clearances