

STANDARD INFORMATION

Standard Number: ANSI Z21.10.1 / CSA 4.1

Standard Name: Gas Water Heaters, Volume I, Storage Water Heaters with Input Ratings of 75,000 BTU per Hour or Less

Standard Edition and Issue Date: 8th Edition dated November 1, 2019

Date of Revision: November 1, 2019

Date of Previous Revision of Standard: 7th edition dated September 1, 2017

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **May 1, 2021**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revise requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revise requirements.

Overview of Changes:

- Addition of test for vent and air intake connection means
- Installation requirements for Category II, III, and IV
- Modification of requirements for venting installation
- Revised markings throughout the standard

Specific details of new/revise requirements are found in table below

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Client Action:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revise paragraphs noted in the attached or explain why these new/revise requirements do not apply to your product (s).

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
<p><i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i></p>		
4	Info	Construction
4.2	Info	Materials
<i>New clause added;</i>		
4.2.11		<p>A venting system supplied with a Category II or IV appliance shall be constructed of material resistant to corrosion by condensate. Non-metallic material shall be judged on its temperature limitations, strength, and resistance to the action of condensate.</p>
Non-metallic vent and air intake connection strength test		
<p>Venting and air intake system parts, including parts within a water heater, shall not break, disassemble, or become damaged when subjected to a longitudinal force of 50 lb (223 N) and a torque of 25 ft-lb (34 N•m).</p>		
Method of Test		
<p>A section of non-metallic vent material of sufficient length to perform this test shall be connected to the exhaust outlet of the water heater.</p>		
4.28		<p>The water heater venting system shall be installed on the water heater in accordance with the appliance or vent manufacturer’s instructions. If cemented joints are included in the assembly of the water heater vent system, the cement shall be allowed to dry as specified in the manufacturer’s instructions.</p> <p>A 50 lb (223 N) force shall be applied along the longitudinal center-line of the vent pipe in a direction tending to pull the vent from the water heater <u>for 5 minutes</u>. <u>The vent shall not become disconnected</u>. A similar force is then applied in the opposite direction for 5 minutes. The vent shall not become disconnected.</p> <p>A torque of 25 ft-lb (34 N•m) is applied to the center-line of the assembly and applied for 1 minute, from one rotation direction. The torque shall then be applied in the opposite direction for 1 minute.</p> <p>After forces and torques have been applied, there shall be no signs of leakage, breakage, or disassembly of the venting and air intake system parts when visually examined.</p>
4.33	Info	Instructions
Figure 2A and 2B		<p>Figures 2A, 2B are amended to reflect the requirements in US installation codes.</p> <p><i>See standard for details.</i></p>



CLAUSE	VERDICT	COMMENT
4.33.2 b)		<p>Instructions shall bear the seal or symbol of the testing agency.</p> <p>b) Installation instructions indicating:</p> <p>4) for Category II, III, or IV water heaters, the manufacturer's instructions shall specify the type of venting material to be used, vent size, and the minimum and maximum vent lengths.</p> <p>B) When the parts for venting the vent gases are not provided by the water heater manufacturer and they are specific types listed by a nationally recognized testing agency, these instructions shall clearly identify and specify the use of the specific parts for the venting system <u>and the standard under which the vent system components are listed.</u> (See Clause 4.34.30.)</p> <p>5) for Category II, III, and IV water heaters, the venting system shall be installed in accordance with the water heater manufacturer's instructions <u>and, if applicable, the venting system manufacturer's instructions.</u></p> <p>7) instructions for proper venting installation:</p> <p>B) <u>For Category II, III, and IV appliances, the venting system shall be installed in accordance with the appliance manufacturer's installation instructions, and if applicable, the venting manufacturer's installation instructions. The instructions for the installation of the venting system shall specify that the horizontal portions of the venting system shall be supported to prevent sagging; the methods of and intervals for support shall be specified. These instructions shall also specify that the venting system:</u></p> <p>i) <u>for Category I and II appliances, have horizontal runs sloping upwards not less than 1/4 inch per foot (21 mm/m) from the appliance to the vent terminal;</u></p> <p>ii) <u>for Category III and IV appliances, slope shall be as specified in the appliance manufacturer's instructions; and</u></p> <p>iii) <u>for Category II and IV appliances, shall be installed with a means for condensate disposal.</u></p> <p>8) <u>If an appliance is marked, "Category I or Category III", the installation manuals shall specify the venting system to be used for each category.</u></p> <p>xx) <u>When an existing Category I appliance is removed or replaced, the original venting system may no longer be sized to properly vent the attached appliances. Instructions shall also indicate effects of an improperly sized venting system (formation of condensate, leakage, spillage, etc.).</u></p> <p>xxii) <u>Unless design certified for coverage with insulation, the instructions shall prohibit covering non-metallic vent pipe and fittings with thermal insulation. If coverage with insulation is not prohibited, the instructions shall specify the type, thickness, and thermal resistance value of the design certified insulation covering.</u></p>



CLAUSE	VERDICT	COMMENT
4.33.2 c)		<p>Maintenance instructions (including recommended frequency guidelines) suggesting:</p> <ul style="list-style-type: none"> ii) <u>periodic cleaning of the screens in the vent terminal (where applicable);</u> x) <u>a condensate neutralization maintenance schedule, if a condensate neutralization means is provided;</u> xi) <u>periodic cleaning of the condensate collection and disposal system(s) (if applicable);</u> xii) <u>for horizontally vented appliances, information on preventing blockage by snow.</u>
4.34	Info	<p>Marking</p> <p>Rating plate(s)</p> <p>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:</p> <ul style="list-style-type: none"> • <u>A plate visible after removal of an access panel is satisfactory.</u> • <u>A rating plate(s) attached to the inner surface of a control compartment or door is considered acceptable, if the door cannot be separated from the appliance using ordinary hand tools.</u> <p>4.34.3</p> <p>This plate(s) shall include the following information:</p> <ul style="list-style-type: none"> s) identification of this Standard with the following marking: <u>“CSA/ANSI Z21.10.1 • CSA 4.1-(year);”</u> “ANSI Z21.10.1 • CSA 4.1-(year);” u) Category of water heater, as applicable: <ul style="list-style-type: none"> i) “Category I” (Fan Assisted or Natural Draft); ii) “Category II”; iii) “Category III”; iv) “Category IV”; v) <u>“Category I or III (see manufacturer’s installation instructions)”</u>. <p><i>New clause added;</i></p> <p>4.34.27</p> <p>If a water heater may be installed as a direct vent water heater, or installed to use indoor combustion air, it shall bear the following marking: “FOR EITHER DIRECT VENT INSTALLATION OR FOR INSTALLATION USING INDOOR COMBUSTION AIR (See manufacturer’s installation instructions.)”</p>



CLAUSE	VERDICT	COMMENT
8	Info	Items unique to Canada
8.3	Info	Outdoor installation <i>New clause added;</i> Components for low temperature operation In Canada, all components and/or controls affecting the safety of the appliance shall be individually certified for the lower ambient operating temperature of the outdoor appliance or enclosed in a supplementary heated compartment. 8.3.1 All operating components and/or controls not affecting the safety of the appliance will be reviewed for their acceptance in the particular application, bearing in mind their certified temperature limitations and the effect that any malfunction may produce. The heated compartment shall not rely solely on recirculating air for supplementary heat. <i>New clause added;</i> Rating plate marking for outdoor heaters 8.3.2 In Canada, the rating plate shall bear the following markings in addition to the requirements of Clause 4.34.3, Rating plate(s): a) minimum ambient air temperature in which the appliance may be operated; and b) a statement reading: "For Outdoor Installation Only," or "For Indoor or Outdoor Installation." <i>New clause added;</i> 8.3.3 The bottom of any combustion air opening shall not be less than 12 in (305 mm) above the bottom of any cabinet or less than 12 in (305 mm) above any other surface of the cabinet which could support snow, ice, or debris.
CUSTOMERS PLEASE NOTE: This Table and column "Verdict" can be used in determining how your current or future production is or will be in compliance with new/revised requirements.		