

## STANDARD INFORMATION

**Standard Number:** CSA E60335-2-6

**Standard Name:** Safety of Household and Similar Electrical Appliances - Part 2-6: Particular Requirements for Stationary Cooking Ranges, Hobs, Ovens and Similar Appliances

**Standard Edition and Issue Date:** 4<sup>th</sup> Edition dated September 1, 2018

**Date of Revision:** September 1, 2018

**Date of Previous Revision of Standard:** 3<sup>rd</sup> Edition dated November 1, 2013

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **March 31, 2022**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with new/revised 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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

New products and those currently certified to a previous edition of the subject standard (E335-2-6 or E60335-2-6) are required to comply with the requirements of CAN/CSA-E60335-2-6:18 prior to the effective date. This edition of CAN/CSA-E60335-2-6 is used in conjunction with CAN/CSA-C22.2 No. 60335-1:16. The previous edition, CAN/CSA-E60335-2-6:13, was used in conjunction with CAN/CSA-C22.2 No. 60335-1-11

### Overview of Changes:

- Introduction of requirements for steam ovens
- Introduction of requirements for ovens intended for use on ships
- Introduction of stabilising means including warnings
- Introduction of a spillage test for built-in under-bench ovens
- Revised representative periods for various appliances
- Revised requirements for oven shelf construction and test

Specific details of new/revised requirements are found in table below.

***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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown <del>lined-out</del> below.</i>
Canadian Deviations		<b><i>New sections added;</i></b> The entirety of the Canadian deviations is new to this edition of CSA E60335-2-6. See standard for details.
5	Info	<b>General conditions for the tests</b>
5.102		<b><i>New clause added;</i></b> Steam convection ovens are tested as ovens.
6	Info	<b>Classification</b>
6.2		<b><i>New clause added;</i></b> Ovens for open deck use shall be IPX6.
7	Info	<b>Marking and instructions</b>
7.1		The total rated power input or rated current of <u>each</u> induction <del>hob elements and induction wok elements</del> generator unit shall be marked.  The rated cooking pressure in kilopascals (kPa) of <u>pressure steam ovens</u> shall be marked.  If a cooking range incorporates a socket-outlet protected by means of fuses, other than D type fuses, it shall be marked with the rated current of the relevant fuse. When a miniature fuse-link is provided, this marking shall indicate that the fuse-link is to have a high breaking capacity.
7.12		If the hob surface is of glass-ceramic or similar material and protects live parts, the instructions shall include the substance of the following:  WARNING: If the surface is cracked, switch off the appliance to avoid the possibility of electric shock.  The instructions for ovens having doors with glass panels <del>shall include and the instructions for hobs with glass hinged lids shall include the substance of the</del> following:  Do not use harsh abrasive cleaners or sharp metal scrapers to clean the oven door glass/ <u>the glass of hinged lids of the hob (as appropriate)</u> , since they can scratch the surface, which may result in shattering of the glass.



CLAUSE	VERDICT	COMMENT
		<p><u>The instructions of pressure steam ovens shall include the substance of the following:</u></p> <p><u>The ducts in the pressure regulator allow the escape of steam, so these ducts should be regularly checked to ensure that they are not blocked.</u></p> <p><u>The instructions of pressure steam ovens shall also give details on how to open the door safely.</u></p> <p><u>The instructions of pressure steam ovens shall include the substance of the following warning:</u></p> <p><u>WARNING: Do not open drain cocks or other emptying devices until the pressure has been reduced to approximately atmospheric pressure.</u></p> <p><u>The instructions for hobs shall include the substance of the following:</u></p> <p><u>Danger of fire: Do not store items on the cooking surfaces.</u></p> <p><u>CAUTION: The cooking process has to be supervised. A short term cooking process has to be supervised continuously.</u></p> <p><u>WARNING: Unattended cooking on a hob with fat or oil can be dangerous and may result in a fire.</u></p>
		<hr/> <p><del>The installation instructions for cooking ranges that are placed on the floor shall state that if the range is placed on a base, measures have to be taken to prevent the appliance slipping from the base.</del></p> <p><u>Unless the instructions for cooking ranges state that the range must not be placed on a base, the instructions for cooking ranges that are placed on the floor shall state that if the range is placed on a base, measures have to be taken to prevent the appliance slipping from the base.</u></p>
7.12.1		<p><u>Unless the instructions state to the contrary, the instructions for cooking ranges and ovens shall state that the appliance must not be installed behind a decorative door in order to avoid overheating.</u></p> <p>The instructions for appliances intended to be connected to the water mains shall include the maximum rated water pressure in megapascals.</p> <p><u>The instructions for ovens that are intended for use on board ships shall include details for fixing the appliance.</u></p>



CLAUSE	VERDICT	COMMENT
7.15		<p>When it is not practical for the marking of fixed appliances to be visible after the appliance has been installed, the relevant information shall be included in the instructions or on an additional label that can be fixed near the appliance after installation.</p> <p>The marking for the rated current of the fuse protecting a socket-outlet shall be placed on or near the socket-outlet.</p> <p><u>Modification:</u></p> <p><u>For stationary appliances except for fixed appliances, at least the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be visible when the appliance is installed as in normal use.</u></p> <p><u>For fixed appliances, the marking of the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be marked on the appliance and, if not visible when the appliance is installed as in normal use, shall be included in the instructions or on an additional label that can be fixed near the appliance after installation.</u></p>
10	Info	<p><b>Power input and current</b></p> <p><u>Socket-outlets are not loaded during the test, however the power input is considered to be 1 kW per socket-outlet.</u></p> <p><u>For ovens and steam ovens, the heat up time to obtain the centre cavity temperature specified for normal operation is a representative period.</u></p> <p><u>For griddles, the heat up time to obtain the surface temperature specified for normal operation is a representative period.</u></p> <p><u>For grills and warming drawers, the heat up period for normal operation is a representative period.</u></p>
10.1		<p><u>For hobs, the heat up time until the water boils with the controls adjusted to their highest setting is a representative period.</u></p> <p><u>For induction hob elements and induction wok elements, the heat up time for the oil to reach a temperature of 180°C ± 4°C with the controls adjusted to their highest setting is a representative period. If the power input is reduced during the heat up time for the oil to reach a temperature of 180°C ± 4°C then the representative period is taken as the time until the first reduction of the power input.</u></p> <p>The power input of induction hob elements and induction wok elements is measured <u>for each induction generator unit</u> separately and the tolerances for motor-operated appliances apply.</p> <p><del>The contribution of a socket outlet to the power input is considered to be 1 kW.</del></p>



CLAUSE	VERDICT	COMMENT
10.2		<p><u>Socket-outlets are not loaded during the test, however the current is considered to be 1 kW divided by the rated voltage.</u></p> <p><u>For ovens and steam ovens, the heat up time to obtain the centre cavity temperature specified for normal operation is a representative period.</u></p> <p><u>For griddles, the heat up time to obtain the surface temperature specified for normal operation is a representative period.</u></p> <p><u>For grills and warming drawers, the heat up time for normal operation is a representative period.</u></p> <p><u>For hobs, the heat up time until the water boils with the controls adjusted to their highest setting is a representative period.</u></p> <p><u>For induction hob elements and induction wok elements, the heat up time for the oil to reach a temperature of <math>180^{\circ}\text{C} \pm 4^{\circ}\text{C}</math> with the controls adjusted to their highest setting is a representative period. If the current is reduced during the heat up time for the oil to reach a temperature of <math>180^{\circ}\text{C} \pm 4^{\circ}\text{C}</math> then the representative period is taken as the time until the first reduction of the current.</u></p> <p><u>The current of induction hob elements and induction wok elements is measured each induction generator unit separately and the tolerances for motor-operated appliances apply.</u></p>
11	Info	<b>Heating</b>
11.3		<p>The temperature of the centre of the oven and the temperature rises of the surface of the rectangular box are determined using the thermocouples specified for the walls of the test corner.</p> <p>If the magnetic field of an induction hob element unduly influences the results, the temperature rises can be determined using platinum resistances with twisted connecting wires or any equivalent means.</p> <p><u>During the test of 11.101, if the front and side surfaces are flat, temperature rises are measured using the probe of Figure 104.</u></p> <p><u>The probe is applied with a force of <math>4\text{ N} \pm 1\text{ N}</math> to the surface in such a way that the best possible contact between the probe and the surface is ensured. The probe is applied for a period of at least 5 min before the final temperature reading is taken.</u></p> <p><u>The probe can be held in place using a laboratory stand clamp or similar device.</u></p> <p><u>For flat front and side surfaces, any measuring instrument giving the same results as the probe can be used.</u></p>



CLAUSE	VERDICT	COMMENT
11.4		<p>Induction hob elements and induction wok elements are supplied separately and operated as specified for motor-operated appliances.</p> <p>Cooking ranges are operated at 1,15 rated power input under normal operation. The supply voltage is measured when the power input has stabilized. This voltage is used to supply the heating units of the cooking range during the tests.</p> <p><u>Ovens are operated at 1,15 times rated power input under normal operation. The supply voltage is measured during the heat up period. This voltage is used to supply the heating units of ovens during the tests.</u></p>
11.101		<p><u>Pressure steam ovens and atmospheric steam ovens are operated in each steam mode with controls adjusted to their highest setting. Other ovens are operated without accessories other than a grid shelf that is positioned on the shelf supports closest to the vertical centre of the oven. The mean temperature in the centre of the oven is maintained at 200 °C ± 4 °C.</u></p> <p><u>However, if the oven is a pyrolytic self-cleaning oven, it is operated under the cleaning conditions in accordance with 11.7.102.</u></p> <p>Hob elements and griddles are operated in accordance with 11.7.</p> <p>Warming drawers and similar compartments are operated with the controls adjusted to the highest setting.</p> <p><u>Pressure steam ovens and atmospheric steam ovens are operated 30 min. Other appliances are operated for 60 min or until steady conditions are established, whichever is shorter.</u></p> <p>During the test, the temperature rise of surfaces shall not exceed the values specified in Table 102, <u>Table 103 or Table 104 as appropriate.</u></p> <p><u>If the oven door is protected by a guard, the temperature rise limits in Table 102, Table 103 or Table 104, as appropriate, specified for the front surface of oven doors apply to the guard.</u></p> <p><u>However, if the guard is a detachable guard the temperature rise limits in Table 102, Table 103 or Table 104, as appropriate, specified for other surfaces apply to parts of the oven door protected by the guard.</u></p> <p><u>For ovens intended to be used on a working surface the temperature rise limits in the relevant Table 102 specified for parts situated more than 850 mm above the floor apply.</u></p>



CLAUSE	VERDICT	COMMENT
13	Info	<b>Leakage current and electric strength at operating temperature</b>
13.2		If there is earthed metal between live parts and the surface of glass-ceramic or similar material of hobs, the leakage current is measured between live parts and each vessel in turn connected to the earthed metal. If there is no earthed metal, <u>the peak value of the leakage current, measured, using the circuit described in Figure 4 of IEC 60990</u> , between live parts and each of the vessels in turn, shall not exceed 0,35 mA.
15	Info	<b>Moisture resistance</b>
15.2		<u>Built-in ovens that are intended for use installed under work surfaces shall be subjected to a spillage test with 0,5 l of the spillage solution. They shall be installed according to the manufacturer's instructions except that the front surface of the oven (excluding control knobs, handles) shall align with front edge of a 30 mm thick wooden work surface with a square front edge, see Figure 105. The spillage solution shall be poured on the work surface steadily over a period of 15 s so that the spillage solution flows down the front surface of the oven including controls and vents.</u>
19	Info	<b>Abnormal operation</b>
19.4		<i>New clause added;</i> Pressure regulators of pressure steam ovens are rendered inoperative together with each protective device in turn. <i>New clause added;</i>
19.103		Induction hob elements and induction wok elements are operated under the conditions of Clause 11 with empty vessels, the controls being adjusted to the highest setting.  If an induction hob element or an induction wok element has a metallic lid, it is then tested by being operated under the conditions of Clause 11 without vessels, the controls being adjusted to the highest setting. A force of 30 N is applied to the closed lid in the most unfavourable place by means of test probe B of IEC 61032.
20	Info	<b>Stability and mechanical hazards</b>
20.101		Cooking ranges and ovens shall have adequate stability when the open door is subjected to a load.  <u>For an appliance having more than one door, the test is carried out on each door separately.</u>  <u>The oven shelves are placed in the most unfavourable position.</u>



CLAUSE	VERDICT	COMMENT
21	Info	<b>Mechanical strength</b> Oven shelves and their supports shall have adequate mechanical strength.  Compliance is checked by the following test.  A vessel filled with sand or shot is placed on the oven shelf. The total mass in kilograms is equal to 220 times the volume of the useful oven space in cubic metres, or 24 kg, whichever is less.  The shelf, with the vessel placed centrally on it, is inserted into the oven and moved as close as possible to one of the side walls. It is left in this position for 1 min and then withdrawn. It is then reinserted, moved as close as possible to the other sidewall and left for 1 min.  21.101 The test is repeated for each supporting position of the shelf. The shelf and supports shall show no distortion impairing their further use and the shelf shall not fall from the supports.  <u>The above tests are repeated with the mean temperature in the centre of the oven at 200 °C ± 4 °C before starting the test at each supporting position of the shelf.</u>  Ovens with withdrawable shelves fitted with stops or a rest position are then tested as follows.  The shelves are fully extended to the maximum distance allowed by the stops or a rest position. An evenly distributed force of <del>80 N</del> as specified in Table 105 is applied to each shelf, at locations along the front edge of the shelf, using a vessel having side dimensions of Table 105, one side of the vessel being aligned along the front edge of the shelf.
22	Info	<b>Construction</b>  <b><i>New clause added;</i></b>
22.7		All pressure regulators and pressure-relief devices of pressure steam ovens are rendered inoperative and the door is closed. The pressure is gradually increased hydraulically to two times the rated cooking pressure. The container shall not rupture.
22.40		<b><i>New clause added;</i></b>  Hobs shall not be controlled by a remote operation.
22.102		Timers intended to delay the operation of a heating element shall not control a radiant grill, unless the grill is thermally controlled and incorporated in an oven or other compartment. <u>Delayed start timers shall not control a hob element.</u>  Compliance is checked by inspection.





CLAUSE	VERDICT	COMMENT
22.104		<p>Steam ovens shall be constructed so that steam vents and ducts are unlikely to become blocked during normal use.</p> <p><u>Pressure relief devices that operate during the tests of 19.4 and 22.7 shall have an inlet aperture at least 5 mm in diameter or 20 mm<sup>2</sup> in area with a width of at least 3 mm. The area of the aperture at the outlet shall not be less than that of the aperture at the inlet.</u></p> <p>Compliance is checked by inspection <u>and measurement.</u></p>
22.120 - 22.136		<p><b><i>New clauses added;</i></b></p> <p>See standard for details.</p> <p><b><i>New clause added;</i></b></p> <p><b>Resistance to rusting</b></p> <p>For ovens intended for use on board ships compliance is checked by the salt mist test Kb of IEC 60068-2-52,</p> <ul style="list-style-type: none"><li>– for open deck use severity 1 is applicable;</li><li>– for dayrooms use severity 2 is applicable.</li></ul>
31		<p>The coatings of metal parts are prepared for the test as follows:</p> <p>Five scratches are made at least 5 mm apart and at least 5 mm from the edges of the relevant parts to be tested.</p> <p>The test pin of Subclause 21.2 is used for the test. The pin is held at an angle of 80° to 85° to the horizontal and loaded so that the force exerted to its axes is 10 N ± 0,5 N. The scratches are made by drawing the pin along the surface at a speed of approximately 20 mm/s.</p> <p>After the test, the appliance shall not have deteriorated to such an extent that compliance with this standard, in particular with Clauses 8 and 27, is impaired. The coating shall not be broken and shall not have detached from the metal surface.</p>



CLAUSE	VERDICT	COMMENT
32	Info	<b>Radiation, toxicity and similar hazards</b>
		Pyrolytic self-cleaning ovens shall be constructed so that carbon monoxide is not discharged in hazardous quantities during cleaning.
32.101		<u>If compliance relies on the operation of an electronic circuit to calculate the concentration of the carbon monoxide, the test is repeated with the fault conditions in a) to g) of 19.11.2 applied one at a time to the electronic circuit.</u> <u>If the electric circuit is programmable, the software shall contain measures to control the fault/error conditions specified in Table R.1 and is evaluated in accordance with the relevant requirements of Annex R.</u>
Annex R	Info	<b>Software evaluation</b>
		<b><i>New clause added;</i></b>
R.2.25		For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in Table R.1 or Table R.2, detection of a fault/error shall occur before compliance with Clause 19 and subclauses 22.123, 22.124, 22.134 and 32.101 is impaired.
		<b><i>New clause added;</i></b>
R.2.2.9		The software and safety-related hardware under its control shall be initialized and shall terminate before compliance with Clause 19 and subclauses 22.123, 22.124, 22.134 and 32.101 is impaired.