STANDARDS UPDATE NOTICE (SUN)
ISSUED: March 29, 2018

STANDARD INFORMATION

Standard Number: CSA C22.2 No. 150
Standard Name: Microwave Ovens
Standard Edition and Issue Date: 4th Edition Dated August 1, 2016
Date of Revision: August 1, 2016
Date of Previous Revision of Standard: January 1, 2014

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **June 5, 2019**

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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes:

- New section added for polymeric enclosures, supports, and decorative parts.
- New requirements for internal wiring.
- New requirements added for electrical connections.
- New requirement about input test.
- New section added for nichrome wire ignition test, potato fire containment test, waveguide and stirrer fire containment test.
- New section added for thermally protected AC fan motor ignition test.

Specific details of new/revised 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 Required:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised 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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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
		Additions to existing requirements are <u>underlined</u> and deletions are shown ~~lined out~~ below.
5	Info	**Construction**
5.2	Info	**Enclosures for live parts**
5.2.3		***New section added;*** **Polymeric enclosures, supports, and decorative parts**
5.2.3.1		Polymeric materials for enclosures shall a) have suitable mechanical strength and aging and moisture-resisting properties; b) have limiting temperatures not less than the maximum temperatures to which they can be exposed during normal operation; and c) comply with the flammability requirements for 5 VA materials as specified in CAN/CSA-C22.2 No. 0.17.
5.2.3.2		Polymeric materials for parts, other than enclosures, shall comply with the minimum HB flammability requirements in accordance with CAN/CSA-C22.2 No. 0.17.
5.2.3.3		In reference to Clause 5.2.3.2, polymeric materials need not be classed HB minimum if the polymeric part a) is located entirely external to a metallic enclosure of the appliance, does not cover any openings in the metallic enclosure, and the metallic enclosure complies with the requirements in Clauses 5.2.2 and 5.2.3; b) is not more than 0.25 mm thick; or c) does not occupy a volume greater than 4 cm^3, does not have any dimension greater than 60.1 mm, and is located so it cannot propagate flame from one area to another or bridge between a possible source of ignition and other ignitable parts.
5.21	Info	**Internal wiring**
5.21.2		***New clause added;*** All internal wiring shall consist of wire having a flame rating of FT1 and comply with the following: a) CSA C22.2 No. 210; b) CSA C22.2 No. 75; or c) CSA No. 38.

5.21.3	***New clause added;*** In reference to Clause 5.21.2, the requirements shall not apply to a) insulated internal wiring in an extra-low voltage non-safety circuit carrying less than 15 W; b) glass fibre beads of inorganic material, or the equivalent, employed as conductor insulation; and c) solid conductor internal wirings used as filament winding or secondary output wirings of a high voltage transformer.
5.22	***New section added;*** **Electrical connections**
5.22.1	All electrical connections where the total circuit load is greater than 60 W during normal operation shall a) comply with Clauses 5.22.4 to 5.22.6; or b) be evaluated as specified in Clause 7.16. Note: A risk of fire is considered to exist at any two points in a circuit where a power of more than 15 W can be delivered into an external resistor connected between the two points within 5 seconds. To deliver 15 W at a connector, the circuit must have a nominal load of 60 W or more. This is based on the maximum power transfer theorem that shows an electrical connection can only dissipate 1/4 of the power of the load when the resistance of the connection is equal to the resistance of the load.
5.22.2	Electrical connections within components shall not be required to comply with Clause 5.22.1 when all mating parts of the electrical connection are provided with a component (e.g,. contacts within a switch or relay, connections within a motor, etc.) that complies with the relevant component standard. Electrical connections that are mated to the component from the appliance shall comply with Clause 5.22.1.
5.22.3	The requirements of Clause 5.22.1 shall not apply to welded or soldered connections.
5.22.4	With reference to Clause 5.22.1, components such as wire, tubing, sleeving, or tape that are located within 3 mm of an electrical connections as shown in Figure 3 shall have a flammability classification as follows: a) FT1 for wire evaluated in accordance with CSA C22.2 No. 2556; b) FT1 for tubing and sleeving evaluated in accordance with CAN/CSA-C22.2 No. 198.1; or

5.22.5		With reference to Clause 5.22.1, polymeric materials located within 3 mm of an electrical connection as shown in Figure 3 shall have a flammability classification as follows: a) minimum V-0 or VTM-0, in accordance with CAN/CSA-C22.2 No. 0.17; b) minimum SC-0 or SCTC-0, in accordance with CAN/CSA-C22.2 No. 0.17; c) minimum glow wire ignition temperature (GWIT) of 775 °C in accordance with IEC 60695-2-13; or d) withstands glow-wire test (GWT) according to IEC 60695-2-11 with a minimum test severity of 750 °C and, during the test, flames persists for no longer than 2 seconds.
5.22.6		With reference to Clause 5.22.1, all non-metallic combustible materials located within the envelope of a vertical flame cylinder having a diameter of 20 mm and a height of 50 mm, placed above the centre of the connection zone and on top of the non-metallic parts that are supporting current-carrying electrical connections as shown in Figure 4 shall have a flammability classification as follows: a) minimum of V-0, VTM-0, or HF-1, in accordance with CAN/CSA-C22.2 No. 0.17 and IEC 60695-11-10; b) minimum of SC-0 or SCTC-0, in accordance with CAN/CSA-C22.2 No. 0.17; or c) minimum FT1 for wire, tubing, sleeving and tape in accordance with Clause 5.22.4.
5.22.7		With reference to Clause 5.22.6 and Figure 4, the flame cylinder shall be placed above the centre of each connection zone and on top of any non–metallic parts that are supporting current-carrying connections as shown in examples 1 to 3 of Figure 4. In the case of uninsulated connections, the flame cylinder shall be placed above the centre of each connection zone and directly on top of current- carrying conductors as shown in examples 4 to 6 of Figure 4. The flame cylinder shall project through all metallic and non-metallic material. If “C” is intended to act as a barrier to “D”, or if the flame cylinder extends beyond the outer enclosure of the appliance, then the adequacy of the barrier shall be demonstrated by testing as described in nichrome wire ignition test specified in Clause 7.16.
7	Info	**Tests**
7.7	Info	**Temperature, abnormal operation**
7.7.3.1		The abnormal operation tests indicated in Items (a) to (h) shall be conducted. Unless otherwise stated, a water load identical to that used in the normal operation temperature test of Clause 7.6 shall be located in the cavity of the microwave oven. The abnormal operation tests to be performed are as follows: a) the blocked exhaust openings test; b) the stalled stirrer test; c) the locked magnetron blower motor test; d) the empty cavity test (with water load removed from the oven cavity);

		e) the flare-up (popcorn) test: (i) The following load placed on a minimum 7 cm diameter paper plate shall be located in the centre of the cooking shelf of the oven cavity. (ii) The load shall consist of 0.2 kg of popcorn well-mixed with 25 mL of vegetable oil and contained in a clear plastic bag tied with a steel wire twist tie; f) the potato fire containment test; g) the waveguide and stirrer fire containment test; and h) the thermally protected AC fan motor ignition test. ~~The additional abnormal operation tests indicated in Items (f) and (g) shall be conducted for appliances with resistive elements and operated under conditions specified in Clause 6.2.3.2 with no load located in the oven cavity:~~ ~~(f) the empty cavity test;~~ ~~(g) the locked convection blower motor test.~~
7.14	Info	**Rating**
7.14.2		***New clause added;*** The input to a cord-connected appliance intended for use on nominal 120 V branch circuit protected by overcurrent devices rated or set at not more than 15 A shall not exceed 1500 W at 120 V.
7.16		***New section added;*** **Nichrome wire ignition test** This section contains requirements for the nichrome wire ignition test for electrical connections (see standard for details).
7.17		***New section added;*** **Potato fire containment test**
7.17.1		In reference to Clause 7.7.3.1(f), the test load for this test shall consist of one or more potatoes placed in the cavity. Each potato shall weigh between 150 g and 200 g, have a volume between 140 mL and 180 mL, and have a moisture content of 80 ±5%. The number of potatoes used shall be the maximum number obtained in Table 7, when both output rating and cavity size are considered.
7.17.2		If an appliance is provided with a limit control or thermal cutoff that is responsive to oven cavity temperatures, the test shall be conducted with the number of potatoes indicated in Table 7 and also with a single potato.
7.17.3		The load described in Clause 7.17.1 shall be placed in the most severe position in the cavity in relation to plastic or other flammable materials. Such positioning may include locating the load adjacent to the 38door or side stirrer shield or on a rack adjusted to the most severe position in relation to an overhead stirrer shield.
7.18		***New section added;*** **Waveguide and stirrer fire containment test**
7.18.1		This test does not apply to models where the waveguide is sealed to prevent moisture or food debris.

7.18.2	In reference to Clause 7.7.3.1(g), a mixture of 15 g peanut butter, 8 g water, 10 g chicken broth, 8 g salt, and 2 g finely crushed carbonized wood (charcoal/carbon powder) shall be well mixed and applied evenly to the inside surface of the waveguide cover. Once applied, the waveguide cover shall be replaced to the position of normal operation.
7.18.3	The appliance shall be operated at full microwave power without load until ultimate results are obtained, or for the test duration specified in Clause 7.7.1. In the case of an appliance with a heater element, operation shall be representative of the most severe condition that could be encountered during intended use, consistent with the highest microwave power setting.
7.18.4	This test shall be repeated on the stirrer on models that also contain a stirrer.
7.19	***New section added;*** **Thermally protected AC fan motor ignition test**
7.19.1	In reference to Clause 7.7.3.1(h), this test shall be conducted on thermally protected motors if such motors are not totally enclosed in metal or 5 V material.
7.19.2	All motor thermal protectors shall be shunted out of the motor winding so that the motor stays continually energized. The motor shall be equipped with a thermocouple for measurement of winding temperatures. The rotor shall be locked. The motor, including fan blade, shall be mounted as intended in application and shall be energized in a room ambient temperature of 10 to 40 °C.
7.19.3	The motor shall be energized at the rated voltage separately from the microwave oven and operated until the winding temperature stabilizes. The voltage shall be increased in 10 V increments allowing the winding temperature to stabilize after each increase in voltage. Operation shall continue until ultimate results are obtained. As a result of the test, there shall be no evidence of ignition of the external cheesecloth surrounding the appliance.

	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.