**SFDA conditions and requirements for non-ionizing radiation emitting devices**

1. **Condition**
   Local manufacturer supplier, distributor, importer. shall provide a letter that guarantee this device comply with SFDA requirements for the following device:

2. **Requirements for Microwave oven**

   2.1 **Description**
   A microwave oven is a device designed to heat, cook, or dry food thoroughly through the application of electromagnetic energy in the normal ISM heating bands ranging from 890 megahertz to 6,000 megahertz. The definition in the standard is limited to those manufactured for use in homes, restaurants, food vending, or service establishments, on interstate carriers, and in similar facilities.

   2.2 **Labeling**
   The warning sign, is a sign that
   - a. is shown in two contrasting colours;
   - b. is clearly visible and identifiable from a distance of 1 metre;
   - c. has no outer dimensions less than 2 centimetres;
   - d. bears the words —CAUTION — MICROWAVES in English and Arabic
2.3 Construction Standards

1. Every microwave oven shall be designed and constructed in such a manner that, under the conditions of use specified by the manufacturer, it functions in accordance with section 2.4 with its original components or replacement components recommended by the manufacturer for at least
   a. 200,000 use cycles or openings and closings of the oven door, in the case of a commercial microwave oven; and
   b. 100,000 use cycles or openings and closings of the oven door, in the case of any other microwave oven.

2. Every microwave oven shall be designed and constructed to include the following safety features:
   a. for each microwave power source, a device or indicator that provides a visible indication of the status of operation of the oven;
   b. a device to monitor one or more of the interlocks required by subsection (g) that renders the oven inoperable when a monitored interlock fails or is otherwise rendered inoperable;
   c. where the power can be varied by a user control, an indicator to show the level of microwave power applied to the cavity;
   d. where a total microwave power generating capacity of 25 kilowatts or more is used, a lock on the control panel requiring the insertion of a key before microwave power can be generated;
e. where access to the cavity is not by a conveyor, a door constructed and positioned so as to ensure that any leakage radiation does not exceed the limits prescribed by section 2.4;

f. a covering or baffle arrangement over any viewing screen, vent or access port in the cavity wall, other than any opening through which conveyor borne material enters or leaves the cavity, that prevents the insertion of any object into the cavity while the microwave power source is in operation;

g. where the oven is equipped with a door as specified in subsection (e), at least two electrically and mechanically independent interlocks positioned so as to ensure that

i. the door cannot be opened until the microwave power generating component has been turned off, and

ii. the microwave power generating component cannot be turned on while the door is open; and

h. components and shields constructed and positioned so that adjustments to the service controls and user controls to yield maximum possible output do not produce leakage radiation in excess of the limits prescribed by section 2.4.

3. Every microwave oven shall have permanently affixed to and clearly visible on its external surface the following information and warning sign:

a. the name of the manufacturer and the model number, serial number and place of manufacture of the oven;

b. the type of microwave power generating component and the normal operating voltage, operating frequency and normal maximum output power thereof;

c. a description of the test load prescribed by subsection 4(3)(a);
d. the year and month of manufacture of the oven;

e. the sign described in section 2.3; and

f. where the oven is not a commercial microwave oven, the words —NOT FOR COMMERCIAL USE — in English and Arabic

4. Where a microwave oven is equipped with a conveyorized system, a warning sign described in section 2.3 shall be permanently affixed to its external surface adjacent to each entry and exit port.

5. Where the generation of X-rays within a microwave in excess of 2.5 milliroentgens per hour averaged over 10 square centimetres is possible while the oven is functioning in accordance with section 2.4(1), an X-radiation warning sign that is clearly visible while the microwave oven is being serviced shall be permanently affixed to the microwave power generating component.

2.4 Functioning Requirements

1. Every microwave oven shall, when fully assembled and operating with its service controls and user controls adjusted to yield the maximum output, function in such a manner that

   a. the leakage radiation, measured with the instrument prescribed by subsection (3)(b), at all points at least 5 cm from the external surface of the oven, does not exceed

      i. 1.0 mW/cm2 with the test load prescribed by subsection (3)(a) placed
A. in the centre of the shelf in the cavity, in the case of an oven that is designed for cooking and that has a total microwave power generating capacity not greater than 1.5 kW, and

B. as specified by the manufacturer, in the case of an oven other than an oven described in clause (A), and

ii. 5.0 mW/cm² without a test load, where the oven is operable in such conditions; and

b. the intensity of X-ray exposure, at 5 cm from the external surface of the oven, does not exceed 0.5 mR per hour spread over an area of 10 cm².

2. Every microwave oven shall, when the outer enclosure is removed and it is operating with its service controls and user controls adjusted to yield the maximum output, function in such a manner that the leakage radiation, measured with the instrument prescribed by subsection (3)(b) and with the test load prescribed by subsection (3)(a) in the cavity, at all points at least 5 cm from every mechanical or electronic part of the oven that is accessible to the user of the oven including, but not limited to, the waveguide, cavity, cavity seam, magnetron and magnetron to waveguide connection, does not exceed 5.0 mW/cm².
3. For the purposes of subsections (1) and (2),
   a. the test load shall be
      
      i. in the case of an oven that is designed for cooking and that has a total microwave power generating capacity not greater than 1.5 kW, 275 ± 15 ml of water at an initial temperature of 20 ± 5°C, and
      
      ii. in the case of an oven other than an oven described in subsubsection (i), the substance and amount thereof specified by the manufacturer as the load to be used for testing the oven; and

   b. the instrument used to measure leakage radiation shall
      
      i. be capable of measuring a power density of 1.0 mW/cm² with an accuracy of 2 dB or better, and
      
      ii. have an indicator with a response time not greater than 3 seconds.

2.5 Support services

   The local manufacturer, agent, distributor, or importer shall establish service center that ensure providing necessary service.