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(JEMA)

**Household and similar electrical
appliances—Safety—
Part 2-9 : Particular requirements
for toasters, grills, roasters and
similar appliances**

ICS 13.120; 97.040.20

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Electrical Manufacturer's Association (JEMA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS C 9335-2-9 : 1998** is replaced with this Standard.

This revision has been made based on **IEC 60335-2-9 : 2002** *Household and similar electrical appliances—Safety—Part 2-9 : Particular requirements for toasters, grills, roasters and similar appliances* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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Household and similar electrical appliances—Safety— Part 2-9 : Particular requirements for toasters, grills, roasters and similar appliances

Introduction This Japanese Industrial Standard has been prepared based on IEC 60335-2-9 *Household and similar electrical appliances—Safety—Part 2-9 : Particular requirements for toasters, grills, roasters and similar appliances* published in 2002 as the fifth edition and amendment 1 : 2002 with some modifications in the technical contents. This is to be read in conjunction with JIS C 9335-1 : 2003 *Household and similar electrical appliances—Safety—Part 1 : General requirements*.

In this Standard, the portions underlined with dots are the matters modified from the original International Standard. The list of modifications is given in annex 1 (informative) with the explanation being attached.

1 Scope This Standard deals with the safety of electric portable appliances for household purposes that have a cooking function such as baking, roasting and grilling, their rated voltage being not more than 250 V.

NOTE 101 Examples of appliances that are within the scope of this Standard are

- barbecues for indoor use;
- contact grills (griddles);
- cookers;
- food dehydrators;
- hotplates;
- portable ovens;
- raclette grills;
- radiant grills;
- roasters;
- rotary grills;
- rotisseries;
- toasters;
- oven toasters;
- waffle irons;

Examples are illustrated in figure 101.

As far as is practicable, this Standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTE 102 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, water supply authorities and similar authorities.

NOTE 103 This Standard does not apply to

- stationary ovens and stationary grills (**JIS C 9335-2-6**);
- warming plates (**JIS C 9335-2-12**);
- frying pans and deep fat fryers (**JIS C 9335-2-13**);
- microwave ovens (**JIS C 9335-2-25**);
- barbecues for outdoor use (**JIS C 9335-2-78**);
- appliances intended for commercial catering;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

NOTE : The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21**.

IEC 60336-2-9 *Household and similar electrical appliances—Safety—Part 2-9 : Particular requirements for toasters, grills, roasters and similar appliances* (MOD)

2 Normative references Normative references shall be as stated in clause 2 of **JIS C 9335-1**.

3 Definitions For the purpose of this Standard principal definitions in clause 3 of **JIS C 9335-1** is applicable except as follows.

3.1.9 Replacement

normal operation operation of the appliance as specified in the following subclauses

NOTE 101 Appliances not mentioned but which nevertheless perform one of the functions are operated as specified for this function as far as possible.

3.1.9.101 Toasters are loaded with the maximum number of slices of white bread specified in the instructions and operated in cycles, each cycle consisting of an operation period and a rest period. The bread is approximately 24 h old and the dimensions of the slices are approximately 120 mm × 130 mm × 20 mm. The rest periods

have a duration of 30 s or the minimum period needed for the resetting of a control, whichever is longer. The slices of bread are replaced during each rest period. The operating period is established by adjusting controls to give the bread a golden-brown colour. For toasters without a control, each operating period is terminated as soon as the colour of the bread turns golden-brown.

Toasters incorporating a device for heating rolls are loaded with the maximum number of rolls specified in the instructions. The toaster is operated in cycles, each cycle consisting of an operating period followed by a rest period of 30 s when the rolls are turned or replaced. The control is adjusted in accordance with the instructions. If instructions are not given, the control is adjusted for the toasting operation.

Sandwich-toasting attachments are loaded with one or more sandwiches that are positioned in accordance with the instructions to produce the most unfavourable result. Each sandwich comprises two slices of white bread filled with a single slice of suitable cheese having an area equal to a slice of bread and a thickness of approximately 5 mm. The toaster is then operated in accordance with the instructions in cycles, each cycle consisting of a toasting operation followed by a rest period of 30 s, or the minimum period needed for the resetting of a control, whichever is longer.

NOTE : Processed cheese and other cheeses that readily melt when heated are suitable.

3.1.9.102 Rotary grills are operated with the load on the rotating spit shown in figure 102.

NOTE : If the maximum load is stated in the instructions, a weight of the said mass shall be used.

3.1.9.103 Waffle irons having a thermostat are operated with the thermostat adjusted to the highest setting. Other waffle irons are operated so that the temperature at the centre of the heated surface is maintained at $210\text{ }^{\circ}\text{C} \pm 15\text{ }^{\circ}\text{C}$ by switching the supply on and off.

3.1.9.104 Oven toasters and ovens are operated with the door closed. Ovens having a thermostat are operated so that the mean temperature in the centre of the cavity is maintained at $240\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$ or at the value obtained with the thermostat adjusted to its highest setting, if this results in a lower temperature. Other ovens are operated so that the temperature in the centre of the cavity is maintained at $240\text{ }^{\circ}\text{C} \pm 15\text{ }^{\circ}\text{C}$ by switching the supply on and off.

3.1.9.105 Roasters are operated with the lid closed. The mean temperature in the centre of the container is maintained at $240\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$, if necessary by switching the supply on and off.

3.1.9.106 Radiant grills, rotary grills and raclette (a Swiss dish consisting of boiled potatoes with melt cheese) appliances are operated with the controls adjusted in accordance with the instructions, or if instructions are not provided with the controls adjusted to the highest setting. Doors or lids are open unless otherwise specified in the instructions.

Contact grills having a thermostat are operated with the thermostat adjusted to the highest setting. Other contact grills are operated so that the temperature at the centre of the heated surface is maintained at $275\text{ }^{\circ}\text{C} \pm 15\text{ }^{\circ}\text{C}$ by switching the supply on and off.

Raclette grills are operated with doors or lids open, unless otherwise specified in the instructions. Controls are adjusted in accordance with the instructions, pans being in position or removed, whichever is more unfavourable.

3.1.9.107 Barbecues are operated with food supports in the lowest position. Controls are adjusted to the highest setting, any covers or shields being positioned in accordance with the instructions.

NOTE : Barbecues are operated without water even if the use of water is recommended.

3.1.9.108 Hotplates, other than induction hotplates, are operated with vessels containing water. The vessels are made of unpolished commercial quality aluminium, have a flat bottom and are covered with a lid. A suitable vessel is specified in figure 103. Controls are adjusted to their highest setting until the water boils and then adjusted so that the water simmers. Water is added to maintain the level during boiling.

NOTE 1 The lid is positioned so that steam does not affect the test.

Induction hotplates are operated with vessels, as specified in figure 104, containing cooking oil. Controls are adjusted to their highest setting until the oil temperature reaches $180\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$ and are then adjusted so that this temperature is maintained. The oil temperature is measured 1 cm above the centre of the bottom of the vessel.

For all hotplates, the diameter of the bottom of the vessel is approximately equal to the diameter of the cooking zone and the quantity of liquid is specified in table 101. The vessel is positioned centrally on the cooking zone.

Table 101 Quantity of liquid in the vessel

Diameter of cooking zone mm	Quantity of water or oil L
≤ 110	0.6
$> 110 \text{ and } \leq 145$	1
$> 145 \text{ and } \leq 180$	1.5
$> 180 \text{ and } \leq 220$	2
$> 220 \text{ and } \leq 300$	3

NOTE 2 If several cooking zones are marked for one hotplate, the most unfavourable zone is used for the test.

NOTE 3 For non-circular cooking zones, the smallest non-circular vessel is used that will cover the cooking zone as far as possible, taking into account the hob rim and other vessels. The quantity of liquid is determined on the basis of the minor diameter of the cooking zone.

3.1.9.109 Raclette appliances are operated with the controls adjusted in accordance with the instructions, or if instructions are not provided, with the controls adjusted to the highest setting.

3.1.9.110 Food dehydrators are operated empty.

3.101 toaster appliance intended for toasting slices of bread by radiant heat

3.102 waffle iron appliance having two heated hinged plates that are shaped to contain batter

3.103 oven appliance having a heated cavity with a door and constructed so that food that may be in a container can be placed on a shelf

3.104 roaster appliance having a heated container with a lid and constructed so that food can be placed in it

3.105 rotary grill appliance having a visible glowing heating element and a rotating spit to support the food

NOTE : A rotary grill is also known as a rotisserie.

3.106 radiant grill appliance having a visible glowing heating element and a support on which food can be placed

NOTE : A radiant grill may be placed in a compartment with or without a door.

3.107 contact grill appliance having a heated surface on which food is placed. It may have a second heated surface to cover the food

NOTE : A contact grill with only one heated surface is known as a griddle.

3.108 sandwich-toasting attachment accessory for use with a toaster for toasting sandwiches

3.109 raclette grill appliance for melting slices of cheese placed in small pans positioned under the heating element

NOTE : Raclette grills may have a surface that is used as griddle.

3.110 raclette appliance radiant grill for melting the surface of a large piece of cheese

3.111 barbecue radiant grill having a heating element located under the food support

3.112 hotplate appliance having one or more heating units on which vessels can be placed for cooking purposes

NOTE : Hotplates do not incorporate an oven or grill.

3.113 induction hotplate hotplate that can heat at least one metallic vessel by means of eddy currents

NOTE : The eddy currents are induced in the bottom of the vessel by the electromagnetic field of a coil.

3.114 cooker appliance incorporating a hotplate and an oven

NOTE : Cookers may incorporate a grill.

3.115 food dehydrator appliance for dehydrating food by means of heated air

NOTE : The appliance may incorporate a fan.

3.116 heating unit part of the appliance that fulfils an independent cooking or warming function

3.117 cooking zone area marked on a hotplate where the vessel is placed for heating food

3.118 touch control control actuated by contact or proximity of a finger, with little or no movement of the contact surface

3.201 flat control control actuated by moving of mechanical contacts pushed by a finger. However, control by a pressure not exceeding 0.4 N is considered to be touch control.

3.202 oven toaster appliance mainly intended for toasting slices of bread or other shaped bread (hot dogs, rolls, etc.) by placing them on roasting net in a box type roasting chamber. Requirements for ovens are applicable for oven toasters.

4 General requirement General requirement shall be as stated in clause 4 of JIS C 9335-1.

5 General conditions for the tests General conditions for the tests shall be as stated in clause 5 of JIS C 9335-1 except as follows.

5.2 Addition to 5.2 of JIS C 9335-1:

NOTE 101 If the test of 15.101 has to be carried out, three additional samples are required.

5.3 Addition to 5.3 of JIS C 9335-1:

If it is evident from the construction of the appliance that the test of one function will produce more favourable results than another, this function is not tested.

5.6 Addition to 5.6 of JIS C 9335-1:

If two or more cooking functions can be performed simultaneously, they are tested at the same time.

5.101 Induction hotplates are operated as specified for motor-operated appliances. Other appliances are tested as specified for heating appliances, even if they incorporate motors.

6 Classification Classification shall be as stated in clause 6 of JIS C 9335-1.

7 Marking and instructions Marking and instructions shall be as stated in clause 7 of JIS C 9335-1 except as follows.

7.1 Addition to 7.1 of JIS C 9335-1:

The rated power input or rated current of induction hotplates shall also be marked.

- Appliances intended to be partially immersed in water for cleaning shall be marked with the maximum level of immersion and the substance of the following:

Do not immerse beyond this level.

7.12 Addition to 7.12 of JIS C 9335-1:

- The instructions for appliances incorporating an appliance inlet, and intended to be partially or fully immersed in water for cleaning, shall state that the connector must be removed before the appliance is cleaned and that the appliance inlet must be dried before the appliance is used again.
- The instructions for appliances intended to be used with a connector incorporating a thermostat shall state that only the appropriate connector must be used.
- The instructions for ovens shall include the substance of the following:

The door or the outer surface may get hot when the appliance is operating.

- The instructions for oven toasters and toasters shall include the substance of the following:

The bread may burn, therefore do not use the toaster near or below combustible material, such as curtains. Keep your eye on the toaster.

- The instructions for barbecues shall include the substance of the following:

WARNING : Charcoal or similar combustible fuels must not be used with this appliance.

- The instructions for barbecues intended to be used with water shall state the maximum quantity of water to be poured into the appliance.

- The instructions for hotplates having surfaces of glass-ceramic or similar material protecting live parts 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 induction hotplates shall include the substance of the following:

Metallic objects such as knives, forks, spoons and lids should not be placed on the hotplate since they can get hot.

8 Protection against access to live parts Protection against access to live parts shall be as stated in clause 8 of **JIS C 9335-1** except as follows.

8.1.1 Addition to 8.1.1 of JIS C 9335-1:

For toasters having a crumb tray, the test finger is not applied through the crumb-tray opening to live parts that are disconnected by the operation of a double pole switch. However, it shall not be possible to touch these parts with test probe 41 of **IEC 61032**.

9 Starting of motor-operated appliances Clause 9 of **JIS C 9335-1** is not applicable.

10 Power input and current Power input and current shall be as stated in clause 10 of **JIS C 9335-1** except as follows.

10.1 Addition to 10.1 of JIS C 9335-1:

The power input of induction hotplates is measured separately. Tolerances for motor-driven appliances are applied.

10.2 Addition to 10.2 of JIS C 9335-1:

The current of induction hotplates is measured separately. Tolerances for motor-driven appliances are applied.

11 Heating Heating shall be as stated in clause 11 of **JIS C 9335-1** except as follows.

11.2 Addition to 11.2 of JIS C 9335-1:

Radiant grills and raclette grills that are loaded from the front, rotary grills, ovens, hotplates and cookers are placed with their backs as near as possible to one of the walls of the test corner and away from the other wall. Other appliances are placed away from the walls.

11.3 Addition to 11.3 of JIS C 9335-1:

NOTE 101 If the magnetic field of an induction hotplate unduly influences the results, the temperature rises can be determined using platinum resistances with twisted connecting wires or any equivalent means.

11.4 Addition to 11.4 of JIS C 9335-1:

If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits, and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1.06 times rated voltage.

11.7 Replacement of 11.7 of JIS C 9335-1:

Toasters are operated for 15 min under normal operation. Unless they are constructed to toast only one slice of bread, they are tested for a further 5 min with one slice of bread inserted in the most unfavourable position.

Toasters incorporating a device for heating rolls are operated for five cycles.