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Domestic gas cooking appliances

家用燃气灶具

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Domestic gas cooking appliances

1 Scope

This standard specifies the terms and definitions, product classification, requirements, test methods, markings, packaging of domestic gas cooking appliances.

This standard applies to domestic gas cooking appliances, that use town gas, AND domestic gas-electric combined stoves, that use town gas and electric energy, including:

- a) A gas stove, which has a single burner's nominal heat input of ≤ 5.23 kW;
- b) Gas ovens and gas roasters, which have a nominal heat input of ≤ 5.82 kW;
- c) Freestanding gas cookers and independent hotplate and grills, whose nominal heat input meets the requirements of a) and b);
- d) Gas-fired rice cooker, which has a maximum rice volume for each stew ≤ 4 L AND a nominal heat input ≤ 4.19 kW;
- e) Gas-electric combined stoves, whose nominal heat input meets the requirements of a), b), d), AND whose total rated input power of electricity is ≤ 5.00 kW;
- f) The integration cooking appliance, whose nominal heat input meets the requirements of a) and e);
- g) Domestic outdoor gas barbecues (hereinafter referred to as gas barbecues), which is gas-supplied by a liquefied petroleum gas cylinder, with a charge of not more than 15 kg, AND has a total heat input of not greater than 35 kW.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 191 Packaging - Pictorial marking for handling of goods

and repair.

- f) The connection of hoses and hose connectors shall take tightening measures.

5.3.1.9 For all types of stoves (excluding products for outdoor use, such as gas ovens), each burner shall be equipped with a flameout protection device.

5.3.1.10 When the knob is grasped in normal use, it shall be impossible for the operator's hand to touch those parts, with excessive temperature rise.

5.3.1.11 Asbestos shall not be used in the structure of stoves.

5.3.1.12 When the stove with a cover plate is in use, the cover plate shall not fall by itself. When the angle between the cover plate and the stove surface is less than 60°, the gas path shall be closed AND shall not be opened by itself.

5.3.2 Stove structure

Use non-metallic materials for the panel. When the panel is broken, it shall meet the following requirements:

- a) The fragments must not splash;
- b) The cooking utensils do not topple over.

5.3.3 Roaster structure

When placing a container on the vent of the roaster, it must not affect the exhaust of the flue gas. When the container cannot be placed, it shall be marked with text, where it is easy to see.

5.3.4 Oven structure

5.3.4.1 The oven door shall be stable, during the load test. It shall not cause deformation and damage, that may affect its use.

5.3.4.2 For the oven without an ignition device, it shall have a structure in which the fire hole can be exposed and ignited, only when the oven door is opened.

5.3.4.3 The burner's fire hole in the oven shall be easy to clean. Meanwhile it shall not be easily extinguished by liquid overflow.

5.3.4.4 When the baking tray of the oven is pulled out two-thirds, there shall be no slippage. If it is equipped with the locking device, it shall be in the locked position.

5.3.4.5 The exhaust outlet of the oven shall not be located on the back of the

cabinet.

5.3.4.6 If the oven is equipped with a hot air circulation fan, when the door is opened, the fan shall stop running. Meanwhile, it shall be ensured that there will be no danger, when putting in and taking out the baked goods. The fan shall be equipped with a protective frame and a protective net.

5.3.4.7 The lighting facilities, in the oven, shall be equipped with protective covers.

5.3.5 Rice cooker structure

Boiled water cannot be poured on the automatic flameout device of the rice cooker. The automatic flameout device shall not overheat.

5.3.6 Structure of oven stove

5.3.6.1 The gas pipeline of the oven and stove shall be connected by metal pipes.

5.3.6.2 The oven and stove shall be controlled independently.

5.3.7 Structure of integration cooking appliance

5.3.7.1 The integration cooking appliance shall have a unique gas inlet, when in use, wherein the pipe threads are used.

5.3.7.2 The gas pipe of the integration cooking appliance (including the gas pipe of the ignition burner) shall be located at a position, where it is not overheated and not corroded.

5.3.7.3 The gas pipe of the integration cooking appliance shall be connected by metal pipes.

5.3.7.4 For the screw holes and bolt through holes for installing parts on the integration cooking appliance, they shall not be opened in the gas path. Except for the measuring hole, the wall thickness, between other purpose holes and the gas path, shall not be less than 1 mm.

5.3.7.5 Gas cylinders shall not be placed in the integration cooking appliance.

5.3.7.6 The integration cooking appliance shall be equipped with a flue fire safety device.

5.3.7.7 When the integration cooking appliance is in use, there shall only be a single power input interface; the remaining spare interfaces shall be effectively closed.

5.3.8.11 The accidental automatic reconnection of the self-resetting thermal circuit breaker and overcurrent protection device shall not cause danger.

5.3.8.12 For the reset button of a non-self-resetting controller, if its accidental reset can cause danger, it shall make it impossible for accidental reset OR otherwise be protected from accidental reset.

5.3.8.13 For the non-detachable parts of the component that is prevented from contact, the waterproof components, or the moving parts that is prevented from contact, they shall be fixed in a reliable way AND withstand the mechanical stress, that occurs during normal use.

5.3.8.14 For the handles, knobs and similar parts, which are used to indicate the gears of switches or similar components, they shall be impossible to fix in the wrong position, if the wrong position may cause danger.

5.3.8.15 Effectively prevent direct contact between live parts and thermal insulation, unless otherwise the material is non-corrosive, non-hygroscopic, non-flammable.

5.3.8.16 For wood, cotton, silk, plain paper, similar fibers or moisture-absorbing materials, they shall not be used as insulation, unless otherwise they are impregnated.

5.3.8.17 The structure of the cooking appliance shall be such, that the drooping electric heating wire cannot contact with easily touchable metal parts.

5.3.8.18 The parts, which are connected by protective impedance, shall be separated by double insulation or reinforced insulation.

5.3.8.19 For the creepage distances and electrical clearances, on additional insulation and reinforced insulation, they shall not be reduced to below the values, which are specified in Table 9, due to wear. If any wires, screws, nuts, washers, springs or similar parts become loose or fall off from the original position, the creepage distance and electrical clearance, on the additional insulation or reinforced insulation, shall not be reduced to 50% of the value, which is specified in Table 9.

5.3.8.20 For the additional insulation and reinforced insulation, its design and protection shall ensure that, the deposition of dust or dirt, which is caused by the wear of the internal parts of the cooking appliance, will not reduce the creepage distance or electrical clearance to be less than the value, which is specified in Table 9.

5.3.8.21 Conductive liquids that are easy to touch or may become easy to touch, in normal use, shall not be in direct contact with live parts. For category II structures, this type of liquid shall not directly contact the basic insulation or

reinforced insulation. Perform visual inspection, to check its eligibility.

5.3.8.22 The shafts of operating knobs, handles, joysticks and similar parts shall not be energized, unless otherwise the shaft is not easily accessible, when the parts on it are removed.

5.3.8.23 For handles, joysticks, knobs, which are held or manipulated in normal use, even if the insulation fails, they shall not be live. If these handles, joysticks or knobs are made of metal, meanwhile their shafts or fixtures may become live, in the case of insulation failure, they shall be adequately covered by insulating materials, OR their accessible parts shall be separated from their shafts or fixtures, by the additional insulation.

5.3.8.24 Capacitors shall not be connected between two corresponding contacts of a thermal circuit breaker.

5.3.8.25 The protective impedance shall be composed of at least two separate components. The impedance of these components cannot change significantly, during the service life of the cooking appliance.

5.3.8.26 The internal wiring shall meet the following requirements:

- a) The wiring groove shall be smooth, without sharp edges. Wiring shall be protected, so that they do not come into contact with burrs, cooling fins or similar edges, that can cause insulation damage. The metal hose, wherein insulated wire is passed through, shall have a flat and smooth surface, OR be equipped with a bushing. The wiring shall be effectively prevented from contacting the moving parts.
- b) Insulating beads and similar ceramic insulation on live metal wires shall be fixed or supported, so that they cannot change position. They shall not be placed on sharp edges or sharp corners. If the insulating beads are in a flexible metal conduit, they shall be enclosed in an insulating sleeve, unless otherwise the conduit cannot be moved during normal use.
- c) The exposed internal wiring shall be rigid and shall be fixed, so that in normal use, the creepage distance and electrical clearance cannot be reduced to less than the value, which is specified in Table 9.
- d) The insulation of the internal wiring shall be able to withstand the electrical stress, that may occur during normal use. The electrical performance of its insulation shall meet the requirements, which are specified in GB/T 5023.3 or GB/T 5013.4.
- e) When the bushing is used as additional insulation for internal wiring, it shall be kept in place in a reliable manner.

power cord shall not be damaged.

- e) The location of the cord fixing device shall be such, that they can only be reached with the aid of tools, OR its structure shall be such, that the cord can only be assembled with the aid of tools.
- f) The insulated wire of the power cord shall be separated again, from the accessible metal parts, by basic insulation. The insulation can be provided by the sheath of the power cord OR other methods.
- g) The power cord shall use a cord, that meets the requirements of GB/T 5023.3 or GB/T 5013.4-2008.
- h) The power cord, which is used for category I cooking appliances, shall have a yellow/green core ground wire.
- i) Where the wire of the power cord is subjected to contact pressure, it shall not be reinforced by lead-tin soldering, unless otherwise the structure of the clamping device is such, that there is no danger of poor contact, due to the cold flow of the flux.
- j) The power cord shall not be in contact with the tip or sharp edge of the cooking appliance.
- k) The cord entry shall have a bushing, OR its structure shall be such, that the power cord sheath can be penetrated, without the risk of damage. The cord entry sheath shall:
 - Have a shape that can prevent damage to the power cord;
 - Be a non-removable part.

At the cord entrance, the insulation, between the wire of the power cord and the enclosure of the cooking appliance, shall consist of the insulation layer of the cord, plus at least two separated insulation layers.

If the enclosure at the cord entrance is made of insulating material, only one separated layer of insulation is required.

- l) Cooking appliances, which have power cords, shall be equipped with cord fixing devices, to avoid tension and torque at the connections of the wires in the cooking appliances, meanwhile, to protect the insulation of the wires from abrasion.

It shall not be possible to push the cord into the cooking appliance, to the extent that it can damage the cord or internal parts of the cooking appliance.

Check its eligibility by visual inspection, manual test, as well as the following

- a) Under the conditions of its reasonable application, all kinds of electrical parts and electronic components shall comply with relevant national standards.
- b) The power cord's terminal of the cooking appliance can be connected, by external wires, through soldering, welding, crimping and similar connection methods. Terminals shall meet the following requirements:
- 1) The wiring terminals of the power cord shall be suitable for their purpose. For the terminals clamped by screws and screwless terminals, they shall not be used for the connection of flat double-core foil wires, unless otherwise the end of this foil wire is equipped with a device, which is suitable for use with screw terminals.
 - 2) Terminals shall not be reached, without the aids of tools, even though the live parts on them are inaccessible.
 - 3) Grounding terminal:
 - The accessible metal parts of category I cooking appliances shall be permanently and reliably connected to a grounding terminal, in the cooking appliances. The grounding terminal shall not be connected to the neutral terminal.
 - The clamping device of the grounding terminal shall be sufficiently firm, to prevent accidental loosening.
 - For the wiring terminal of the power cord OR the wire between the cord fixing device and the terminal, the length shall be set, so that if the cord slips out of the cord fixing device, the current-carrying wire is tightened before the grounding wire.
- c) The screws shall meet the following requirements:
- 1) If the failure of the fastening device and the electrical connection may damage the degree of compliance with this standard, it shall be able to withstand the mechanical stress, that occurs in normal use.
 - 2) The structure of the electrical connection shall prevent the contact pressure from being transmitted through insulating materials, that are easy to shrink or deform, unless otherwise the metal parts have sufficient resilience, to compensate for any possible shrinkage or deformation of the insulating material.
 - 3) Wide pitch (metal plate) screws shall not be used for the connection of current-carrying parts, unless otherwise they compress those parts in direct contact with each other.

- 4) Self-tapping screws cannot be used as electrical connections for current-carrying parts, unless otherwise they can form a completely standard-shaped mechanical screw thread. If this kind of screw may be operated by the user or installer, it shall not be used, unless otherwise the thread is extruded.
- 5) As long as it does not interfere with the connection in normal use, meanwhile at least two screws are used at each connection, THEN, the self-tapping screws and wide-pitch screws can be used to provide grounding continuity.
- 6) For the screws and nuts for mechanical connection, between the different parts of the cooking appliance, if they are also electrically connected OR provide grounding continuity, they shall be reliably fixed, to prevent loosening.

5.4 Materials

5.4.1 General requirements for materials

5.4.1.1 It shall be able to withstand the temperature under normal use.

5.4.1.2 Metal parts (except corrosion-resistant materials) shall be electroplated, painted, enamel, OR adopt other suitable anti-corrosion surface treatment.

5.4.1.3 For the parts that are in direct contact with food AND the parts that may come into contact, they shall be made of materials, that do not produce harmful chemical changes to the human body OR materials, that have undergone appropriate surface treatment; it shall not produce harmful substances. It shall meet the following relevant requirements:

- Stainless steel parts, that are in direct contact with food, shall meet the requirements of GB 4806.9.
- Enamel parts, that are in direct contact with food, shall meet the requirements of GB 4806.3.
- The PTFE coating, that is in direct contact with food, shall meet the requirements of GB 4806.10.
- Other materials, that are in direct contact with food, shall meet the requirements of the corresponding food safety standards in China.

5.4.1.4 The material shall meet the relevant standards. After the test, it shall meet the following requirements:

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