


company name	Shenzhen YLD Home Appliances	File No	HK-QM09-2017
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Maker	ROAD 2017.9.22	Website	https://yld-home.com/

Special test methods and standards for inspection of small household appliances

1. Purpose:

- 1.1 Ensure product quality and meet customer, legal and regulatory requirements
- 1.2 Confirm the inspection standards of the products and improve the familiarity of the new employees of the company with the products

2. in accordance with


According to IEC60335

● Product testing standards

1.UK BS plug

- 1. How to open the power cord:
 - 1.1 The size of the open wire should be in accordance with the wiring instructions of the BS1363 plug sticker.
 - 1.2 Use copper tape at the open end of the wire, and it is not acceptable for the wire tail to be completely or mostly immersed in tin.
 - 1.3 The lead insulation layer must not be damaged.
 - 1.4 When the live wire is suddenly pulled out of the terminal, the ground wire should have sufficient length to remain connected.

2. Installation method:

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2.1 The insulation part of the wire must pass through the crimping plate at least 5mm
2.2 The terminal screws must be fixed on the copper tape.
2.3 When installing terminal screws, the lead wires cannot be bifurcated and can withstand 3LB pulling force.

3. Plug hanging weight test

3.1 The wires are fixed by the BS plug pressing plate, and the separate connection of the internal wires can withstand 60N (13LB) tensile force for 1 minute. After the internal connection is subjected to the tensile force, the displacement cannot exceed 2mm.

4. Screw torque

4.1 The screw torque of the fixed terminal shall not be less than 4kg
4.2 The screw torque of the plug should not be less than 5kg

5. Defective standard judgment

Category 5.1 electrical appliances do not have a standard grey sticker to describe the wiring method to ensure compliance with UK specifications, count C is serious

5.2. Grays (fuse) current is lower than rated current, count as primary and secondary M

5.3 If the current of gray (fuse) is greater than the rated current, count the light times m

5.4 The color wire core is connected to the wrong terminal block. Count C Severe

5.5 Wire strands loose, Count C is serious

5.6. There are objects inside, the metal meter is C serious, and the plastic meter M is mainly.

2. US UL polarity size pins, SPT-1/SPT-2 wires

1.1 The large pin line has a ribbed line, and the zero line is connected to the lead wire of the heater.

1.2 The small pin wire skin has no grain line, which is the live wire, connected to the switch, and connected to the gray person.


3. plastic parts electroplating reliability test

1 Visual inspection

1.1 The electroplating layer on the plastic surface is uniform,


1.2 The color conforms to the sample

1.3 The side can't have thorns and strikes

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- 1.4 The entire surface should not be scratched or without electroplating.
- 1.5 Oxidation and corrosion are not acceptable
2. Drop test of electroplated plastic parts
 - 2.1, 38 inches in height. The electroplated plastic parts fall vertically on the wooden board,
 - 2.2 Repeat 10 times
 - 2.3 The electroplating layer should not be cracked, peeled off, wrinkled or blistered.
3. One hundred grid test for electroplating stability of electroplated plastic parts
 - 3.1. Use a medium knife to select a 3 cubic millimeter plastic electroplating surface and draw 100 squares
 - 3.2 Wipe off surface oil stains and fingerprints with a soft cloth
 - 3.3, use one end of 3M tape to stick to the surface of the test piece.
 - 3.4 Quickly pull up the other end vertically.
 - 3.4 If the square falls off, it is unqualified
- 4 Salt spray test of electroplated plastic parts
 - 4.1 Put the test sample into the salt spray test box for 4 hours.
 - 4.2 Set the temperature to $49 \pm 1^{\circ}\text{C}$
 - 4.3 Spray salt spray (specific gravity of salt water: 5% salt water, 95% water, add 0.25 grams of bleaching water per kilogram of salt water.
 - 4.4 The electroplating coating cannot peel off and corrode
 - 4.5 Tested with 3M tape, it cannot fall off.

Note: Tested according to ASTM Standard B368-85.
2. Rapid Heat/Freeze Test for Electroplated Plastic Parts (This specification provides a rapid aging test and checks the soundness of the plastic surface)
 - 5.1 Blow with 1600W air duct hot air for 10 minutes, (note that the temperature of ABS material cannot exceed 65°C)
 - 5.2 Immediately place the electroplated parts in ice water of no more than 2 for 1 minute.
 - 5.3 Repeat the cycle 5.1 and 5.2 3 times.
 - 5.4 Guidelines. The electroplating layer of electroplated parts shall not have peeling, cracking, peeling or blistering.

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4. Nonstick Coating Test

1.pencil test

- 1.1 Use a 2H pencil to do a scratch resistance test on the surface of the non-stick coating.
- 1.2 Do not use the pointed end, use the flat end
- 1.3 The pencil is inclined at a 45-degree angle and pushes the pencil on the coating surface with a force of 1KGF, and moves 10mm in 2-4 seconds at the same speed
- 1.4 Results Criteria: No coating should be peeled off or lines should be left behind.


2.3M tape test

- 2.1 Prepare the test panel and draw a hundred small grids on the surface of the non-stick coating with a medium knife (each grid is 3mm long × 3mm wide)
- 2.2 Stick one end of 3M tape to the grid on the coated surface
- 2.3 Quickly pull up the other end vertically to check whether the grid coating is peeled off
- 2.4 Repeat the above 2.2, 2.3 actions five times
- 2.5 Each test must be replaced with a new tape
- 2.6 Result standard: The surface of the grid coating is not allowed to fall off.

5. Tempered glass lid test

1.stamping test

- 1.1 Wrap the entire cover (front and rear) with wire wrap or sealing glue, and put the wrapped cover into a PE bag.
- 1.2 Use a punching tool to punch the glass. The punching point is about 1-1.5 inches away from the metal ring.
- 1.3 The broken glass should be crystalline
- 1.4 The number of broken glass should be at least 80 pieces of 25 square centimeters of water
- 1.5 The maximum weight of broken glass cannot exceed 4.25 grams.

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2. impact test

2.1 Use a 225-gram iron ball to freely fall from a height of 1.2 meters to a 1/4-inch position on the edge of the glass cover

2.2 Repeat, 2.1 Action 3 times

Standard, after the impact test, the glass cover is not rotten and cracked.

3. Furnace test,

Test purpose: to detect the problem of excessive copperization, if excessive copperization will cause the glass cover to explode naturally.

testing method

3.1 Adjust the oven temperature to 160°C

3.2. Place in the oven for 20 minutes

3.3 Remove the glass cover with protective gloves and immerse it in room temperature water for one minute.

3.4 Repeat the above 3.1. 3.2 3.3 actions 4 times

Standard: The glass cover cannot be cracked and rotten

6. Salt water immersion test

testing method

1.5% salt and 95% water mix

1.2 After fully immersing the parts for 4 hours, take them out and let them air dry at room temperature.

Standard: No rust or yellow stains allowed.

7. Salt spray test


testing method:

1. solution standard

☐ 5% salt and 95% water

☐ PHValue: 6.5

2. Spray volume per hour/80cm²/1.0ml

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3.Pressure: per square centimeter / 1 kg

4.Relative humidity 95%

5. Pressure temperature 47°C

6. Test temperature 35°C

Standard: 1. No rust stains, plaques, stains, oxidation, blistering, peeling.

2.There should be no indelible stains on the surface

3.If there are yellow stains on the surface but it can be wiped off, it is acceptable.

8. No printing glue foot drag test

Purpose of the test: In order to prevent the user's countertop from causing stains, difficult to clean or damage. This test is to ensure that the product uses a non-printing offset printing.

testing method:

1.Put the whole product on the A4 paper that has been attached to the platform

2.Drag the product 10CM in a straight line at a uniform speed on the white paper

Standard: 1. No prints can stick to the paper 2. No glue feet can be left behind.

9.Internal lead clamp terminal

testing method

1. Hold the force of 5LB by hand for 5 seconds, and the clamp contacts must be intact.


Result criteria:

1. If the pulling force is less than 3LB force, the inner lead and the clamp terminal are displaced, and the M is the main defective product.

2. When the force is greater than 3LB and less than 5LB, the inner lead and the clamp terminal are displaced, and the minor time is m

10. Portable product 3-foot throwing machine

testing method:

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1.Prototypes must be intact, high voltage, and functioning properly prior to throwing the machine.

2.The prototype was carried out at the specified voltage, and dropped 3 times from a height of 3 feet on a 1-inch thick hardboard

Result criteria: The result after the drop of the prototype must be intact and functional.

11.Power Cord Packaging Requirements

1.Such as PVC power cords, for example, SPT-2 or SVT cords must be packed with plastic bags. The PVC power cords cannot directly touch the styrofoam,

Direct contact Chemical reactions can occur during storage and during transport.

2. The white wire pins cannot be covered with PVC, the white wire pins are protected by PVC, and the power cord turns yellow.

3. The PE plastic bag of the packaging product, the opening exceeds 5 inches, the warning must be printed, and two sets of holes are punched at the top and bottom.

12. Pad printing, screen printing test


1. Scrape with your fingertips: Use your fingertips to gently scrape the surface of the pad printing or silk screen printing 5 times, and the words or sentences cannot fall off.

2. Wet the white gauze with alcohol with a concentration of 75%, and use the strength of 1.5+5%/-0KGF to go back and forth on the screen printing surface for 30 times (about 15 seconds). Defects such as notch disconnection, ink falling off, etc.

The surface color of the silk screen pattern is allowed to be lighter, but the silk screen pattern should be clear and not blurred.

3. Use 3M#600 tape to completely cover the surface of the silk-screen pattern, then pull it up quickly at a 45° angle, and test it three times in a row. The silk-screen pattern is not allowed to fall off, break lines, gaps, etc.

4. Use #800 tape on the color cover, then pull it up quickly at a 45° angle, test 3 times in a row, the UV coating cannot fall off

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13. Stability test: place the product on a sloping board (normal use), and cannot be turned over

1. UL specification: 8° inclined plate
2. CE specification: 6° inclined plate
3. SAA specification: 10° inclined plate
4. CNS specification: 15° inclined plate

14. Pull test: power cord, terminal block (pacifier)

1. UL specification: The power cord uses 35 pounds of tension, keep it for 1 minute, and the displacement does not exceed 2mm

2. CE specification: According to the weight of the product, the pulling force selected is different, and the pulling force is 25 times/min on the power cord. The tension is applied in the most unfavorable direction,

pull	N	30	60	100
product weight	Kg	$0 < \text{Kg} \leq 1$	$1 < \text{Kg} \leq 4$	$4 < \text{Kg}$

3. Terminal tension: The terminal (commonly known as nipple, terminal cap) is tested with a tension of 5 pounds, the terminal cannot fall off, the copper wire is exposed, etc.

15. Capacity test:

Weigh the container with water, test the standard capacity, record the value, standard $\pm 10\%$
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16. Noise test:

1. Place the noise tester at 30CM of the product, the test result should be lower than 85 decibels, and the distance of 1 meter should be less than 80 (refer to customer requirements for details)

17. Power test: test the product according to the voltage and frequency indicated on the bottom label of the product

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1. The power of electric heating should be between +5%-10%
2. For electric products, there is no specific standard for no-load power, and the load power must be less than the rated power

18. Temperature test: the working temperature of electric heating products

1. There is no specific standard for the working temperature of electric heating products, which mainly depends on customer requirements or product type (such as boiling water, the water temperature must be above 98° C)

Temperature rise test:

① After the product works normally for one cycle, the surface temperature that the product may be in contact with (room temperature 24° C)

surface	bare metal	coated metal	glass or ceramic	Plastic or plastic coating > 0.3mm
temperature rise k	45	55	60	65

② For the surface that the product can contact, if the temperature rise is greater than the limit in the above table and less than 2 times the limit, a warning should be




pasted: CAUTION: Hot surface or symbol. Warning words or symbols, to be marked on the surface of the product with the highest temperature. And it requires a position that is easy to see in normal use.

19. Pressure test:

1. UL specification: 1250V 0.5mA 1~3s
2CE specification: Class I: 1500V 1mA 1~3s
Class II: 3750V 1mA 1~3s
Class III: 500V 5mA 1~3s
2. Heat-generating metal shells need to be tested for thermal resistance

20. Catch Ground test (resistance):

Set the current value to 25A, test between the ground terminal and accessible metal parts for 2 sec. Ground resistance < 0.1ohm

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21. Leakage current

Electric type: Under the condition of room temperature and no electricity, apply a voltage of 1.06 times between the live parts and the accessible parts, and within 5S, the leakage current between the live parts and the plastic shell, handle and thermostat knob should not be greater than 0.25 mA;

The leakage current between live parts and accessible metal parts) shall not exceed 0.75mA

Electric heating type: 1.15 times the rated input power, under normal working conditions, test its leakage current $A \leq 0.75\text{mA}$.

22. Life test:

Based on product characteristics

23. Food test:


1. Do the food test according to the recipe in the manual or the recipe provided by the factory

24. Fuse tube test: This test is an abnormal test, generally used in electric heating products

1. Short-circuit temperature control, check whether the fuse tube plays a protective role, after disconnection, do a withstand voltage test to check whether there is leakage

25. Dismantling the internal machine for inspection

1. The live wire of the power cord should be connected to the inner button switch, neutral live wire, ground wire, and the wiring is correct.
2. The PCB must be fixed, the surface of the PCB must be coated with moisture-proof oil, the PCB cannot be loosened, and the PCB has no solder slag, false soldering, virtual soldering, and no cracks.
3. The lead wire should be completely inserted into the terminal lug, and can not be loosened

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without false welding

4. Leads can not touch the active parts

5. The wiring groove should be smooth without sharp edges and corners
6. The wiring nipple cannot have a flying core, and the force of $\geq 5\text{LB}$ cannot be loosened.
7. Pulling force of touch welding point $\geq 8\text{KG}$
8. The terminal pulling force is greater than 5LB and cannot be loosened
9. Main parts refer to product specifications and CDF tables