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Household and similar electrical appliances – Safety – Particular requirements for multifunctional shower room

家用和类似用途电器的安全 – 多功能淋浴房的特殊要求

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Foreword

All technical contents of this part are mandatory.

GB 4706 “Household and similar electrical appliances – Safety” is composed of several parts, the part 1 is general requirement AND the rest parts are special requirements.

This part is part 100 of GB 4706.

This part shall be used in conjunction with GB 4706.1-2005 “Household and similar electrical appliances – Safety – Part 1: General requirements”.

The contents in this part which are indicated of “applicable” means that the corresponding clauses in GB 4706.1-2005 apply to this part; the contents in this part which are indicated of “replacement” or “modification” shall prevail; AND the contents in this part which are indicated of “addition” means that in addition to comply with the corresponding clauses of GB 4706.1-2005, it shall also comply with the clauses added in this part.

This part was proposed by the China Light Industry Federation.

This part shall be under the jurisdiction of the National Household Electrical Appliances Standardization Technical Committee.

The main drafting organizations of this part: China Household Electrical Appliances Research Institute, National Household Electrical Appliances Quality Supervision and Inspection Center.

The main drafters of this part: Ma Dejun, Lu Jianguo, Zhu Yan, Xu Zhengang, Sun Peng.

Household and similar electrical appliances – Safety – Particular requirements for multifunctional shower room

1 Scope

This clause in GB 4706.1-2005 is replaced by the following:

This part specifies the safety of the household and similar purposes multifunctional shower room for which the single-phase appliance has a rated voltage of not exceeding 250 V AND the other appliances have a rated voltage of not exceeding 480 V.

Items that are not intended to be used as general household BUT which can still be dangerous to the public, such as appliances used by non-professionals in hotels, fitness centers and similar places, are within the scope of this part.

This part deals with the general danger of the presence of appliances that are likely to be encountered in all residential and residential surroundings.

This part does not cover:

- The risk of using the appliances by unattended child and the disabled;
- The risk of child playing appliances.

Note 1: Note the following:

- As for the shower room equipped on the vehicle, ship or aircraft, it may require additional requirements;
- National health care departments, national labor protection departments, national water supply management departments and similar departments have provided additional requirements for appliances.

Note 2: This section does not apply to:

- The appliance designed for medical purposes;
- The appliance intended to be used in special environmental conditions wherein corrosive or explosive gases (such as dust, steam, or gas) are frequently produced.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this part of GB 4706. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this

Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

This clause in GB 4706.1-2005 is applicable.

3 Terms and definitions

The following terms and definitions as established in GB 4706.1-2005 AND the following terms and definitions apply to this part of GB 4706.

3.1.9 Replacement:

Normal operation

The appliance shall work under the following conditions.

All the sprinklers in the shower room reach the maximum flow rate, AND the heating device with heating function is opened to the maximum gear.

3.101

Multifunctional shower room

It refers to the enclosed room which can provide jetting water current or electromagnetic field from the top, side and other parts, AND has the water heating function.

4 General requirements

This clause in GB 4706.1-2005 is applicable.

5 General conditions of test

This clause in GB 4706.1-2005 is applicable, except as follows.

5.7 Addition:

If the test is affected by the water temperature, the water temperature shall be maintained at 40 °C OR the maximum temperature allowed by the controller, whichever is greater.

6 Classification

This clause in GB 4706.1-2005 is applicable, except as follows.

6.1 Modification:

Multifunction shower room shall be category I, II, or III.

15 Moisture resistance

This clause in GB 4706.1-2005 is applicable, except as follows.

15.1 Addition:

The presence of water trace at the insulation surfaces of components that are powered by not more than 12 V of safety extra-low voltage is negligible.

15.1.2 Addition:

All the sprinklers of the multifunctional shower room shall spray water at the maximum flow rate for 10 min.

16 Leakage current and electrical strength

This clause in GB4706.1-2005 is applicable.

17 Overload protection of transformer and related circuit

This clause in GB 4706.1-2005 is applicable, except as follows.

Addition:

The appliances equipped with chlorinated units shall be repeated of this test, the test current is 95% of the minimum current which can trigger the protection device, AND the test shall be continued to steady state.

18 Durability

This clause in GB4706.1-2005 is not applicable.

19 Abnormal operation

This clause in GB 4706.1-2005 is applicable, except as follows.

19.2 Addition:

For the appliances in which water is circulated, after switching off and emptying the water from the chamber, the appliance sprays water AND the appliance is made working, the heating element is turned on; AND if possible, the pump is at the working or non-working state, whichever is most unfavorable.

19.7 Addition:

The compliance is determined by any appropriate method, such as measuring, weighing, or volume determination by a chemical diluent.

22.102 If the hair is sucked into the orifice to cause danger, the multifunctional shower room with circulating water function shall be so constructed that the hair cannot be sucked into the orifice due to the suction of the water.

Compliance is determined by the following tests.

The appliance is filled with the amount of water required for normal operation.

FIX a natural medium-to-thin hair having the total mass of 50 g to a wood bar of diameter 25 mm and length 300 mm, the length of the free end of the hair is 400 mm, this bar shall have sufficient length to allow the hair to reach the suction opening; and PLACE the hair into water for at least 2 min to make it fully soaked.

MAKE the appliance work at the rated voltage; PLACE the free end of the hair at the suction opening. Within 2.5 min, MAKE the hair move from one side to the other side, to attempt to make the hair totally sucked into the opening.

PULL the wood bar to pull the hair out of water, and MEASURE the pulling force under the following conditions:

- PULL the wood bar along vertical direction;
- PULL the wood bar along the direction at about 40° to vertical direction.

The pulling force shall not exceed 20 N.

If the multifunctional shower room base has a removable cover for covering the suction opening, PLACE the cover in the installation position for test. During the test, the hair is swept over the cover to try to move the cover.

The test is conducted for 5 times.

Note 1: If the shower room has more than one suction opening, then the test is carried out in turn.

Note 2: The hair is periodically brushed, so that the hair is not tangled.

22.103 The multifunctional shower room can be used in conjunction with the water filtration system, so that the purity of water reaches to the requirements.

Note: This does not mean that the filtration system needs to automatically control the pH of the water.

Compliance is determined through visual inspection.

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