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水雾化壁炉

Water Vapor Fireplace

(征求意见稿)

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前 言

本文件按照 GB/T 1.1—2020《标准化工作导则 第 1 部分：标准化文件的结构和起草规则》的规定起草。

请注意本文件的某些内容可能涉及专利。本文件的发布机构不承担识别专利的责任。

本文件由佛山市彤辉电子壁炉有限公司提出。

本文件由中国中小商业企业协会归口。

本文件起草单位：佛山市彤辉电子壁炉有限公司，中度量恒（北京）计量检测有限公司，北京智丞瀚方知识产权代理有限公司，中冶检测认证有限公司。

本文件主要起草人：

本文件首次发布。

水雾化壁炉

1 范围

本文件规定了水雾化壁炉的要求、试验方法、检验规则，以及标志、包装、储存。

本文件适用于水雾化壁炉生产和销售。

2 规范性引用文件

下列文件中的内容通过文中的规范性引用而构成本文件必不可少的条款。其中，注日期的引用文件，仅该日期对应的版本适用于本文件；不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB/T 985.1 气焊、焊条电弧焊、气体保护焊和高能束焊的推荐坡口

GB/T 1727 漆膜一般制备法

GB 4706.1 家用和类似用途电器的安全 第1部分：通用要求

GB 4706.23 家用和类似用途电器的安全 第2部分：室内加热器的特殊要求

GB/T 12522 不锈钢波形膨胀节

GB 14536.1 家用和类似用途电自动控制器 第1部分：通用要求

GB/T 16895.15 建筑物电气装置 第5部分：电气设备的选择和安装 第523节：布线系统载流量

GB 17762 耐热玻璃器具的安全要求

GB/T 24267 建筑用阻燃密封胶

GB/T 39802 城镇供热保温材料技术条件

GB 50168 电气装置安装工程 电缆线路施工及验收规范

GB 50217 电力工程电缆设计规范

NB/T 47003.1 钢制焊接常压容器

HG/T 2006 热固性粉末涂料

QB/T 4096 家用和类似用途室内加热器的性能 第1部分：通用要求

QB/T 4096.22 家用和类似用途室内加热器的性能 第22部分：风扇式加热器的特殊要求国家标准

3 术语和定义

下列术语和定义适用于本文件。

3.1

水雾化壁炉 Water Vapor fireplace

水雾化壁炉是一种利用超声波将水进行雾化，利用壁炉内空气流动作用，配合壁炉灯光，模拟火焰效果的、具有室内装饰性的电采暖设备。

3.2

壁炉架 mantelpiece

安放电壁炉的装饰性框架。

4 要求

4.1 工作环境

在下列环境下水雾化壁炉应能正常使用：

- a) 周围空气温度在 $-40^{\circ}\text{C}\sim 85^{\circ}\text{C}$ ；
- b) 大气压力在 $70\text{kpa}\sim 106\text{kpa}$ ；
- c) 安装空间内无易燃，易爆气体。

4.2 外观、结构

4.2.1 水雾化壁炉外观应整洁、无损伤，标识应清晰。

4.2.2 壁炉结构应设计合理，密封性好、操作方便、安全可靠。

4.2.2 电壁炉应进行表面处理，漆膜的制备应符合 GB/T 1727 的规定。表面光洁，喷涂层均匀，无流痕、气泡和剥落。

4.3 性能要求

4.3.1 额定输入功率

额定输入功率允许的误差为 $\pm 10\%$ 。

4.3.2 温度精度

电壁炉应具备室内温度控制功能，自动控制器应符合 GB 14536.1 的规定，当环境温度达到设定温度时，控温器应动作控制，控制精度应为 $\pm 3^{\circ}\text{C}$ 。

4.3.3 其他性能

水雾化壁炉的其他性能应符合 QB/T 4096.1。

4.4 电器安全要求

水雾化壁炉的安全应符合 GB 4706 及 GB 4706.23。

4.5 有害物质限值

产品的有害物质限值应符合表 1 要求。

表 1 有害物质限值

| 项目 | 限量 |
|---|-------|
| 铅 (mg / kg) | ≤1000 |
| 镉 (mg / kg) | ≤100 |
| 汞 (mg / kg) | ≤1000 |
| 六价铬 (mg / kg) | ≤1000 |
| 多溴联苯 a (mg / kg) | ≤1000 |
| 多溴二苯醚 b (mg / kg) | ≤0.1 |
| 邻苯二甲酸二丁酯 (DBP) % | ≤0.1 |
| 邻苯二甲酸丁苄酯 (BBP) % | ≤0.1 |
| 邻苯二甲酸二 (2-乙基) 己酯 (DEHP) % | ≤0.1 |
| 邻苯二甲酸二异丁酯 (DIBP) % | ≤0.1 |
| 多溴联苯包括一溴联苯、二溴联苯、三溴联苯、四溴联苯、五溴联苯、六溴联苯、七溴联苯、八溴联苯、九溴联苯、十溴联苯。 | |
| b 多溴二苯醚包括一溴二苯醚、二溴二苯醚、三溴二苯醚、四溴二苯醚、五溴二苯醚、六溴二苯醚、七溴二苯醚、八溴二苯醚、九溴二苯醚、十溴二苯醚。 | |

5 试验方法

5.1 试验条件

- a) 环境温度： 20℃±2℃；
- b) 气压：70kPa~106kPa。

5.2 额定输入功率、温度精度

额定输入功率采用功率仪测定，温度测试采用温度计测定。

5.3 其他性能

水雾化壁炉的其他性能应符合 QB/T 4096.1 《家用和类似用途室内加热器的性能 第 1 部分：通用要求》的有关规定。

5.4 有害物质限值

有害物质试验按 GB/T 36560 的规定进行。

6 检验规则

6.1 出厂检验

水雾化壁炉产品应经过检验部门检验合格，并出具产品合格证后方可出厂。出厂检验项目应包括外观、结构，额定输入功率。

6.2 型式检验

水雾化壁炉出现下列情况之一时，应进行该项目型式检验：

- 试制的新产品；
- 改变产品设计、工艺或所用材料明显影响其性能时；
- 连续生产的产品，每年不少于一次；
- 间隔半年以上再生产时；
- 国家监管部门提出检验要求时。

6.3 抽样规则

应在出厂检验合格的产品中随机抽取，抽取数量不少于 2 台。

6.4 判定规则

出厂检验的项目有一项不合格时，则判定不合格。型式检验的项目有一项不合格时，可抽双倍数量样品进行复检，如仍有不合格项时，则判定该批不合格。。

7 标志、包装、储存和使用寿命

7.1 标志

7.1.1 水雾化壁炉应在显著位置设置产品标志及警示标志。

7.1.2 产品标志包括但不限于以下内容：

- a) 制造企业名称；
- b) 产品名称；
- c) 产品商标；
- d) 规格型号；
- e) 制造日期；
- f) 出厂编号；
- g) 执行标准号。

7.1.3 警示标识包括但不限于以下内容：

- a) 应设置在炉体显著位置，并应牢固，不易脱落；
- b) 标牌尺寸不应小于 100 mm*63 mm；

7.2 包装

7.2.1 产品包装在装卸和运输中应保持良好状况。

7.2.2 随同包装应提供下列文件：

- a) 产品合格证;
- b) 产品使用说明书;
- c) 出厂清单;
- d) 产品保修单。

7.3 储存

储存场所应防水防潮，在存放过程中应保持炉体直立；

English version

Water Vapor fireplace

1 Scope

This document specifies the water atomized electronic fireplace requirements, test methods, inspection rules, as well as signs, packaging, storage.

This document applies to the water atomized electronic fireplace production and sales.

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative references in the text. In the case of dated references, only the version corresponding to that date applies to this document; in the case of undated references, the latest version (including all change orders) applies to this document.

GB/T 985.1 Recommended joint preparation for gas welding, manual metal arc welding
gas-shield arc welding and beam welding

GB/T 1727 General methods for preparation of coating films

GB 4706.1 Safety of household and similar electrical appliances Parts 1: General requirements

GB 4706.23 Safety of household and similar electrical appliances Parts 2: Particular requirements for
thermal-storage room heaters

GB/T 12522 Stainless steel bellows expansion joints

GB 14536.1 Automatic electrical household and similar use Part 1: General requirements

GB/T 16895.15 Electrical installations of buildings Part 5: Selection and erection of electrical equipment
Section 523: Current-carrying capacities in wiring systems

GB 17762 Safe requirements of thermotolerant glassware

GB/T 24267 Building sealants for fire resistance

GB/T 39802 Technical requirements for thermal insulation material of urban heat-supplying

GB 50168 Standard for construction and acceptance of cable lineelectric equipment installation
engineering

GB 50217 Code for design of cables of electric work

NB/T 47003.1 Steel welded atmospheric pressure vessels

HG/T 2006 Thermosetting powder coatings

QB/T 4096 Performance of room heaters for household and similar purposes Part 1: General requirements

QB/T 4096.22 Performance of room heaters for household and similar purposes Part 22: Particular requirements for fan heaters

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Water Vapor fireplace

Water Vapor fireplace is a use of ultrasonic water atomization, the use of air flow inside the fireplace role, with the fireplace lights, simulating the effect of flame, with indoor decorative electric heating equipment.

3.2

Mantelpiece

Decorative frame to house an electric fireplace.

4 Requirements

4.1 Working environment

Water Vapor fireplace shall function properly in the following environments:

- a) The ambient air temperature is between -40 °C and 85 °C;
- b) Atmospheric pressure is in the range of 70kpa to 106kpa;

4.2 Appearance, structure

4.2.1 Water Vapor fireplace should be neat and undamaged in appearance and clearly marked.

4.2.2 The fireplace structure should be reasonably designed, well-sealed, easy to operate, safe and reliable.

4.2.2 Electric fireplace should be surface treatment, the preparation of paint film should be in accordance with the provisions of GB/T 1727. The surface is smooth and clean, the spraying layer is even, without flow marks, bubbles and flaking.

4.3 Performance requirements

4.3.1 Rated input power

Water Vapor fireplace is in stable working condition when testing its power the allowable error shall not be greater than $\pm 10\%$.

4.3.2 Thermal efficiency

The thermal efficiency of the electric heater should not be less than 65% at rated operating conditions.

4.3.3 Temperature accuracy

Electric fireplace should have indoor temperature control function, automatic controller should be consistent with the provisions of GB 14536.1, when the ambient temperature reaches the set temperature, the thermostat should be action control, control accuracy should be $\pm 3^{\circ}\text{C}$.

4.3.4 Other performance

Other performance of the Water Vapor fireplace should be in accordance with the relevant provisions of QB/T 4096.1.

4.4 Electrical safety requirements

The safety of Water Vapor fireplace should be in accordance with the relevant provisions of GB 4706 and GB 4706.23.

4.5 Hazardous substance limits

The limit values of hazardous substances of the products shall comply with the Table 1.

Table 1 Hazardous substance limits

| Item | limit value |
|---|-------------|
| lead (mg/kg) | ≤ 1000 |
| cadmium (mg/kg) | ≤ 100 |
| mercury (mg/kg) | ≤ 1000 |
| hexavalent chromium (mg/kg) | ≤ 1000 |
| polybrominated biphenyl a (mg/kg) | ≤ 1000 |
| polybrominated diphenyl ether b (mg/kg) | ≤ 0.1 |
| Dibutyl phthalate (DBP) % | ≤ 0.1 |
| Butyl benzyl phthalate (BBP) % | ≤ 0.1 |
| Bis(2-ethylhexyl) phthalate (DEHP) % | ≤ 0.1 |
| Diisobutyl phthalate (DIBP) % | ≤ 0.1 |
| a Polybrominated biphenyls include monobrominated biphenyls, dibromobiphenyls, tribrominated biphenyls, tetrabrominated biphenyls, pentabrominated biphenyls, hexabrominated biphenyls, heptabrominated biphenyls, octabrominated biphenyls, nine brominated biphenyls, and ten brominated biphenyls. | |
| b Polybrominated diphenyl ethers include monobrominated diphenyl ethers, dibromodiphenyl ethers, tribrominated diphenyl ethers, tetrabromodiphenyl ethers, pentabromodiphenyl ethers, hexabromodiphenyl ethers, heptabromodiphenyl ethers, octabromodiphenyl ethers, nine bromodiphenyl ethers, and ten bromodiphenyl ethers. | |

5 Test methods

5.1 Test conditions

- a) Ambient temperature: $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$;
- b) Air pressure: $70\text{kPa} \sim 106\text{kPa}$;

5.2 Other performance

Other properties of the Water Vapor fireplace should be in accordance with the relevant provisions of QB/T 4096.1.

5.3 Product Hazardous Substance Limits

Harmful substances test is conducted in accordance with the provisions of GB/T 36560.

6 Inspection rules

6.1 Factory inspection

Water Vapor fireplace products should be manufactured by the quality inspection department of the qualified, and issued product certification before leaving the factory.

6.2 Type inspection

Water Vapor fireplace when one of the following conditions occurs, the item should be carried out type inspection:

- Trial production of new products;
- Changing the product design, process or materials used obviously affect its performance;
- Continuous production of products, not less than once a year;
- Interval of more than half a year when the re-production;
- When the national regulatory authorities put forward inspection requirements.

6.3 Sampling Rules

Type inspection shall be randomly selected in the factory inspection of qualified products, the number of extracted not less than 2 units.

6.4 Decision rules

Factory inspection of the project has a qualified, it is judged unqualified. Type inspection of the project has a failed, double the number of samples can be drawn for re-inspection, such as there are still unqualified items, it will be judged that the batch is unqualified.

7 Marking, packaging, storage and service life

7.1 Marking

- 7.1.1 Water Vapor fireplace should be set up in a prominent position product marking and warning signs.

7. 1. 2 Product markings include but are not limited to the following:

- a) Name of the manufacturing company;
- b) Product name;
- c) Product trademark;
- d) Specification model;
- e) Date of manufacture;
- f) Factory number;
- g) Executive standard number.

7. 1. 3 Warning signs include, but are not limited to, the following:

- a) It should be set in a prominent position in the furnace body and should be firm and not easy to fall off;
- b) The size of the label should not be less than 100 mm*63 mm;

7. 2 Packaging

7. 2. 1 Product packaging shall be maintained in good condition during handling and transportation.

7. 2. 2 The following documents shall be provided with the packaging:

- a) Certificate of Conformity of the product;
- b) Product instruction manual;
- c) Factory list;
- d) Product warranty.

7. 3 Storage

The storage place should be waterproof and moisture-proof, and the furnace should be kept upright during storage.
