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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 18801-2008

Replacing GB/T 18801-2002

Air Cleaner 空气净化器

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Foreword

This standard is the revision to GB/T 18801-2002 "Air Cleaner".

This standard replaces GB/T 18801-2002 "Air Cleaner".

Compared with GB/T 18801-2002, the main differences of this standard are as follows:

- Add not applicable apparatus types in the scope;
- Add the terms and definitions - 3.4 "Clean efficiency", 3.5 "Total clean efficiency", and 3.10 "Air pollutant";
- Add 5.6.2.1 "the grading of the clean efficiency of solid pollutants of air cleaner";
- Add 5.6.2.2 "the grading of the clean efficiency of gaseous pollutants of air cleaner";
- Add 5.6.2.3 "the grading of the total clean efficiency of air pollutants of multifunctional air cleaner";
- Add 6.2.1, 6.2.2, and 6.2.3 about accuracy of instruments and equipment;
- Add 6.8.2, 6.8.3, and 6.8.4.

Appendix A and Appendix B of this standard are normative. Appendix C is informative.

This standard was proposed by the China National Light Industry Council.

This standard shall be under the jurisdiction of the National Household Appliances Standardization Technical Committee (SAC/TC 46).

Drafting organizations of this standard: China Household Electric Appliance Research Institute, Beijing Yadu Technology Co., Ltd., National Household Appliances Quality Supervision Testing Center, and Midea Group Co., Ltd.

Main drafting staffs of this standard: Ma Dejun, Lu Jianguo, Chen Hui, Song Liqiang, Zeng Li, Zhu Yan, Sun Peng, and Liu Wuquan.

This standard was first-time issued in September 2002. This time is the first revision to GB/T 18801-2002.

Air Cleaner

1 Scope

This standard specifies terms & definitions, classification, technical requirements, testing methods, inspection rules, marking, packing, transport, and storage of air cleaner.

This standard is applicable to air cleaner with single-phase rated voltage 220V or three-phase rated voltage 380V for household and similar usage. And it is also applicable to air cleaner used by non-professional in public places.

This standard is not applicable to:

- Air cleaner special for automobile purpose;
- Air cleaner special for industrial purpose;
- Air cleaner used in the specific environment places at where corrosive and explosion gases (like dust, vapor and gasses) are often generated;
- Air cleaner for medical purpose.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. For dated reference, subsequent amendments (excluding corrigendum) or revisions of these publications do not apply. However, the parties who enter into agreement according to these specifications are encouraged to study whether the latest editions of these references are applicable. For undated references, the latest editions of the documents are applicable.

- | | |
|------------------|---|
| GB/T 191 | Packaging - Pictorial Marking for Handling of Goods (GB/T 191-2008, ISO 780: 1997, MOD) |
| GB/T 1019 | General requirements for the package of household and similar electrical appliances |
| GB/T 2828.1 | Sampling Procedures for Inspection by Attributes - Part 1: Sampling Schemes Indexed by Acceptance Quality Limit (AQL) for Lot-by-lot Inspection (GB/T 2828.1-2003, ISO 2859-1: 2003, IDT) |
| GB/T 2829 | Sampling Procedures and Tables for Periodic Inspection by Attributes (Apply to Inspection of Stability for Productive Process) |
| GB/T 4214.1-2000 | Acoustics - Household and similar electrical appliances - Test code for determination of airborne acoustical noise - Part 1: General requirements (IEO 60704-1: 1997, EQV) |
| GB 4706.45 | Household and similar electrical appliances - Safety - Particular requirements for air-cleaning appliances (GB 4706.45-1999, IEC 60335-2-65: 2005, IDT) |

GB 5296.2 Instructions for use of products of consumer interest - Part 2: Household and similar electrical appliances

GB/T 13306 Plates

GB/T 18883-2002 Indoor air quality standard

3 Terms and Definitions

For the purpose of this standard, the following terms and definitions apply.

3.1

Air cleaner

It refers to an electrical device with a certain capacity to remove solid pollutant and gaseous pollutant in indoor air.

3.2

Multifunctional air cleaner

It refers to an air cleaner that can remove 2 or more types of gaseous pollutants.

3.3

Clean air delivery rate (CADR)

It refers to the parameter that indicates the cleaning capacity of an air cleaner, expressed by the clean air delivery rate in unit time (CADR), represented in letter Q, in unit of cubic meter per hour (m^3/h).

3.4

Clean efficiency (Efficiency of clean)

It refers to the clean air delivery rate per unit power consumption of an air cleaner, expressed by " η ", in unit of cubic meter per hour watt ($\text{m}^3/\text{h}\cdot\text{W}$).

3.5

Total clean efficiency (Total efficiency of clean)

It refers to the sum of the clean air delivery rate, with various air pollutants removed, generated by per unit power consumption of a multifunctional air cleaner, expressed by " η_z ", in unit of cubic meter per hour watt ($\text{m}^3/\text{h}\cdot\text{W}$).

3.6

Natural decay

It refers to the reduction of the concentration of the pollutants in air, caused by the natural phenomena such as settlement, agglomeration and superficial deposit in test chamber.

Calculate the correlation coefficient R^2 according to the requirements in Appendix B. R^2 shall be larger than or equal to 0.98.

6.5.3 Calculation of clean air delivery rate of air cleaner to remove gaseous pollutant

The clean air delivery rate of air cleaner to remove gaseous pollutant is calculated according to Formula (2).

6.6 Cleaning life span test

6.6.1 Place the air cleaner to be tested on test table at the middle of the test chamber (Appendix A) (except vertical-type air cleaner). Adjust the air cleaner to the test-required working state. Inspect the running condition if it is normal. Then close the switch located outside of the test chamber.

6.6.2 Test the clean air delivery rate of an air cleaner to remove solid pollutant or gaseous pollutant according to the requirements of 6.4 or 6.5. And record it as the initial value.

6.6.3 Start the atmospheric control device. Make the indoor temperature and relative humidity to the specified state. Start the circulating fan. Connect solid pollutant or gaseous pollutant generator with a pipe passing through the test chamber wall. The generated pollutants can be absorbed into the air eddy stirred by the circulating fan. The pollutant concentration in the test chamber shall be kept within 100 times of the value specified in GB/T 18883. And the concentration change shall be kept within 10% of the mean value during the cleaning life span test.

6.6.4 Start the air cleaner to be tested. Record the time as the starting time ($t=0$). After the air cleaner runs for a reasonable time, test the clean air delivery rate of the air cleaner to remove solid pollutant or gaseous pollutant till the clean air delivery rate decreases to 50% of the initial value.

6.6.5 Shut down the air cleaner and record the temperature and relative humidity in the test chamber during the test.

6.6.6 The cleaning life span is calculated according to Appendix B. And it shall meet the requirements of 5.4.

6.7 Trial run

After powered, the air cleaner is operated according to the requirements of the manufacturer's instructions. And it shall meet the requirements of 5.2.

6.8 Noise test

6.8.1 The noise of the air cleaner shall be tested under the normal operating conditions and at the maximal air volume. The acoustical surrounding, test conditions, and testing instruments shall meet the relevant requirements in GB/T 4214.1-2000.

6.8.2 The operation and location of air cleaner shall meet the requirements of Chapter 6 in GB/T 4214.1-2000.

C.4.1.5 Shut down the circulating fan.

C.4.1.6 Do cleaning regularly (see C.5).

C.4.2 Long term shut-down

C.4.2.1 Complete the operations of C.4.1.1, C.4.1.2, and C.4.1.3.

C.4.2.2 Turn-off all power sources.

C.4.2.3 Turn-off the water resource of the heat pump.

C.4.2.4 Do cleaning per specified time (see C.5).

C.5 Cleaning method of test chamber and equipment

C.5.1 Clean the optical instrument daily or frequently, if necessary.

C.5.2 Clean all horizontal surfaces daily.

C.5.3 Mop the floor with a wet-mop after using for 5 d.

C.5.4 clean and wash the walls after using for 20 d.

C.5.5 If necessary, spray antistatic agent frequently or after using for 5 d, so as to ensure the sensor grounding and data logging.

_____ **END** _____

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