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CONSTRUCTION INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

JG/T 233-2008

Ventilator for windows and doors of building

建筑门窗用通风器

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Foreword

This Standard was proposed by the Standard Quota Department of Ministry of Housing and Urban-Rural Development of the People's Republic of China.

This Standard shall be under the jurisdiction of National Technical Committee of Construction Product and Accessory Product Standardization.

Drafting organizations of this Standard: Committee of Windows and Doors Accessories of Building of China Construction Metal Structure Association, Seigenia Window Hardware (Beijing) Co., Ltd, Shenzhen Ludee Industrial Co., Ltd, Beijing Hangtian Haiying Xinghang Electromechanical Equipment Co., Ltd, Guangzhou Yungao Environmental Technology Development Co., Ltd. AND Guangzhou Zupon Architecture Products Development Co., Ltd.

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Ventilator for windows and doors of building

1 Scope

This Standard specifies the terms and definitions, code and mark, material, general requirements, test methods, inspection rules and mark, package, transportation and storage for windows and doors of building.

This Standard is applicable to the ventilator for outer envelope structures (windows and doors, curtain-walls, etc.) of building.

2 Normative references

The articles contained in the following documents become part of this document when they are quoted herein. For the dated documents so quoted, all subsequent modifications (Including all corrections) or revisions made thereafter do not apply to this Standard. However, the parties who reach an agreement according to this Standard are encouraged to study whether the latest versions of these documents may be used. For the undated documents so quoted, the latest versions (including all modification sheets) apply to this document.

GB/T 6881.1-2002 Acoustics - Determination of sound power levels of noise sources using sound pressure--Precision methods for reverberation rooms

GB/T 7106 Graduation and test method for wind resistance performance of windows

GB/T 7107 Graduation and test method for air performance of windows

GB/T 7108 Graduation and test method for watertightness performance of windows

GB/T 8478 Aluminium doors

GB/T 8479 Aluminium windows

GB/T 8484 Graduation and test method for thermal insulating properties of windows

GB/T 8814 Unplasticized polyvinyl chloride (PVC-U) profiles for the doors and windows

GB/T 5237 Wrought aluminium alloy extruded profiles for architecture

GB/T 10802 General flexible polyether polyurethane cellular plastics

GB/T 14436 General principles of industrial product guarantee documents

GB/T 19889.10-2006 Acoustics - Measurement of sound insulation in buildings and of building elements - Part 10: Laboratory measurements of airborne sound insulation of small building elements

GB/T 21086-2007 Curtain wall for building

JG/T 20 Method of testing for rating air distributor performance

JG/T 140 Unplasticized polyvinyl chloride (PVC-U) windows

JG/T 180 Unplasticized polyvinyl chloride (PVC-U) doors

3 Terms and definitions

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

3.1 Ventilator for windows and doors of building

Controllable ventilation device that is installed on building envelopes (windows and doors, curtain-wall, etc.) and BETWEEN wall AND windows and doors; with certain properties of wind-pressure resistance, watertightness, airtightness, and sound-insulation, etc.; able to realize the outdoor and indoor air exchange when in working condition.

3.2 Passive ventilator

Ventilator that realizes ventilation by relying on the air pressure difference generated by indoor and outdoor temperature difference and wind pressure, etc.

3.3 Motor ventilator

Ventilator that realizes ventilation by relying on the motor device added to the ventilator itself.

3.4 Length ventilator

Ventilator of which any two parameters of length, width and height are fixed; and the rest one can be cut-machined into form, in certain range.

4 Classification, code and mark

4.1 Classification

4.1.1 Name code

When ventilation rate of motor ventilator is not less than $30\text{m}^3/\text{h}$, A-weighted sound power level of self noise shall not exceed $38\text{dB}(\text{A})$.

7.6 Sound-insulation property

Ventilator without sound-insulation function;

- a) Under shutdown condition, weighting standardization sound pressure level difference of small ventilator component shall not be less than 25dB ;
- b) Under open condition, weighting standardization sound pressure level difference of small ventilator component shall not be less than 20dB .

Ventilator with sound-insulation function: under both open and shutdown conditions, weighting standardization sound pressure level difference of small ventilator component shall not be less than 33dB .

7.7 Heat preservation property

Heat transfer coefficient (K) of ventilator shall not be beyond $4.0\text{W}/(\text{m}^2\cdot\text{K})$

7.8 Airtight property

Under shutdown condition, air permeation rate (q_1) of unit fissure length of ventilator shall not exceed $2.5\text{m}^3 (\text{m}\cdot\text{h})$, or unit area air permeation rate(q_2) not exceed $7.5 \text{ m}^3 (\text{m}^2\cdot\text{h})$.
[Translator note: units of q_1 and q_2 are different]

7.9 Watertight property

Under shutdown condition, watertight property (ΔP) of ventilator shall not be less than 100Pa ; under open condition, there shall be free from obvious droplet in the room.

7.10 Wind-resistance property

Win-resistance property (P_3) of ventilator shall exceed 1.0kPa .

7.11 Repeated open and shutdown ³⁾

Switch control system of manually controlled switch shall still work normally after 4000 times of repeated open and shutdown, without any loose or tripping in components; control system of electric switch shall still work normally after 5000 times of action.

³⁾ When motor ventilator is equipped with both manually controlled and electric control devices, both shall meet the requirements.

8 Test methods

8.1 Preparation of test sample, record and test order

8.1.1 Preparation of test sample

For length ventilator, sampling is based on length of 1m; for other type of ventilators, sampling is based on per piece; when users have special requirements, sampling is based on actual needs. Take 4 same (they have the same maximum ventilation rate; and under this condition, they have the same sound-insulation limit and same specifications) ventilator test samples.

8.1.2 Record of test sample

Test sample length, width, height and projected area (if test samples are attached with rib strip or rabbet, their projected area shall be deducted) shall be tested before sample installation and recorded.

8.1.3 Test order

Test of Chapter 7: conduct test by taking 3 samples based on the order 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10; and 1 sample for 7.11.

8.2 Appearance

Visual inspection shall be done 400~500mm away from test samples under natural light.

8.3 Allowable size deviation

Use measuring tool with accuracy of 1mm to measure the height, width, diagonal, opposite side size; use measuring tool with accuracy of 0.02mm to measure the same flatness of adjacent component; use feeler gauge to measure the assembly clearance of adjacent components.

8.4 Operation property

8.4.1 Manually controlled ventilator: manually pull the operating handle and arm to check whether they are flexible or in clamping stagnation; measure the rotating force by using tension meter at 100mm away from rotating center.

8.4.2 Electric ventilator: when actual voltage is 80% of nominal voltage and speed-control switch is at the lowest gear, continue for 3 times, while observing whether the ventilator can start up from any static condition.

8.5 Ventilation rate

Products inspected as qualified shall be provided with a certificate conforming to specifications in GB/T 14436.

9.2 Exit-factory inspection

9.2.1 Inspection items

Exit-factory inspection shall be conducted after type inspection is qualified; inspection items of exit-factory are shown in Table 4.

9.2.2 Group-batching and sampling plan

10% and not less than 4 pieces shall be sampled from the same batch, same-specification and same-type products on a random basis.

9.2.3 Qualification determination rules

If samples fail to comply with standard requirements, doubled samples from the original batch shall be taken for re-inspection; if the re-inspection still fails, then it is deemed as unqualified.

9.3 Type inspection

9.3.1 Type inspection items

Type inspection items are shown in Table 4.

9.3.2 When there is one of the following conditions, it shall be subjected to type inspection:

- a) Trial type-identification of new product or when old product transfers manufacturing plant;
- b) When there are significant changes in structure, material and process which may influence the product property, after formal production;
- c) When production is resumed from suspension;
- d) Once per two years under normal production;
- e) When there are significant differences between exit-factory inspection result and last type inspection result;
- f) When it is specified by national quality supervision bodies or contract.

9.3.3 Group-batching and sampling plan

4 pieces shall be sampled as the group from the same batch, same specification and same type of products on a random basis.

10.2.1 Plastic bag, paper or wooden case shall be adopted for package to prevent damp, collision and pressing.

10.2.2 Transportation shall be free from rain and impact, corrosion and deformation.

10.2.3 Ventilation and dryness shall be kept for storage, free from corrosive media.

END

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