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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 22257-2008

General specification for mobile air conditioner

移动式空调器通用技术要求

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1 Scope

GB/T 22257-2008 is the Chinese national standard on general specification for mobile air conditioner, in the field of construction materials and building. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 July 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2009.

Classification: ICS 91.140.30, CCS Y61. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the terms and definitions, product classification, technical requirements, test methods, inspection rules and markings, packaging, transportation, storage of mobile air conditioners. This standard applies to mobile air conditioners, which have a cooling capacity of 14000 W and below, including two series of split mobile air conditioners and packaged mobile air conditioners.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. 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.

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 2859-1:1999, IDT)

GB/T 2829 Sampling procedures and tables for periodic inspection by attributes (Apply to inspection of process stability)

GB 4706.32 Safety of household and similar electrical appliances - Particular requirements for heat pumps, air-conditioner and dehumidifier (GB 4706.32- 2004,

IEC 60335-2-40:1995, IDT)

GB/T 4798.1 Environmental conditions existing in the application of electric and electronic products - Section 1: Storage (GB/T 4798.1-2005,

IEC 60721- 3-1:1997, MOD)

3.4 Air-cooling unit An air conditioner whose cooling system realizes the heat exchange of the condensing system by circulating the air outside the unit.

3.5 Additional water-cooling unit An air conditioner whose cooling system is mainly air-cooled, supplemented by an additional water-cooling. This additional water is provided through a circulating waterway system OR a water tank. The circulating water system OR water tank needs to be designed as part of the unit.

3.6 Single-duct unit An air conditioner whose condensing system performs heat exchange of air, which is taken from the space, room, or area containing the equipment, meanwhile discharges the air outside the space, room, or area through ducts.

3.7 Double-duct unit An air conditioner whose condensing system performs heat exchange of air, which is taken through duct, from outside the space, room, or area containing the equipment, meanwhile discharges the air outside the space, room, or area through ducts.

3.8 Heat pump A cooling system which, by switching the direction of refrigerant operation of the cooling system, absorbs heat from the low-temperature air and releases heat to the room, THEREBY heating up the indoor air. It may also include air circulation, purification devices, humidification and ventilation devices.

5.2 Performance requirements

5.2.1 Sealing performance of cooling system Under normal refrigerant charge, when using a leak detector which has a does not reset, BUT it resets within not more than 30 min after shutdown, it will continue to run for 1 hour.

5.2.7.4 For a manually reset overload protector, if it trips within the first 5 min, it shall be reset forcibly after 10 min of tripping; meanwhile it shall be able to operate continuously for another 1 h.

5.2.8 Cooling at minimum operation When tested according to 6.8, during the 4 hours operation of the air conditioner after the 10 min start-up period, the safety device shall not trip; the frosting area on the windward surface of the indoor side evaporator shall not be greater than 50% of the windward area of the evaporator.

Note 1: An automatic resettable protector, that automatically controls the on and off of the compressor to prevent freezing, is not regarded as a safety device.

Note 2: When the frosting area on the windward surface of the evaporator is not easy to see, it can be judged by the air volume (not less than 25% of the initial air volume).

5.2.9 Condensation When tested according to 6.9, the air conditioner shall meet the following requirements:

- a) Condensation on the outer surface of the box shall not drip;
- b) Indoor air supply shall not carry water droplets.

5.2.10 Condensate removal capacity When tested according to 6.10, the air conditioner shall have the ability to remove condensed water. There shall be no water spilling or blowing out of the air conditioner on the indoor side, so as not to wet the conditioned environment in the sealed space, room or area.

5.2.11 Heating of heat pump at maximum operation

5.2.11.1 When tested according to 6.11, the parts of the air conditioner shall not be damaged; the air conditioner shall be able to operate normally.

5.2.11.2 During the 1 h continuous operation of the air conditioner, its motor's overload protector shall not trip.

5.2.11.3 When the air conditioner stops operation for 3 minutes, it restarts for continuous operation for 1 h; however, in the first 5 min of starting operation, the motor's overload

protector is allowed to trip, but no action is allowed thereafter. In the first 5 minutes of operation, if the motor's overload protector of the heating capacity of heat pump is stable, measure the input power of the additional electric heating device.

6.6.2 Under the rated heating conditions of electric heating, set the air conditioner to a condition such, that the electric heating device is at the maximum power consumption working state. After the operation is stable, test the input power of the electric heating device.

6.6.3 When testing under the working conditions of

6.6.1 and 6.6.2, whilst the electric heating device does not operate, set the air conditioner (or as specified by the manufacturer) to make the electric heating device in the working state; after the operation is stable, test the input power of the electric heating device.

6.7 Test of cooling at maximum operation For packaged units, place the unit in a room. Fully close the ventilation gate (if any), which exchanges the air between the indoor and outdoor, of the air conditioner. Adjust the set temperature, fan speed, guide grille to the maximum cooling state. Operate it at a voltage of $\pm 10\%$ of the rated voltage. After reaching to the working condition as specified in Table 6, let it be stable. Then continue operating it for 1 h. Shut it down for 3 min (during which the power supply voltage rises by not more than 3%). Then start and operate it for 1 h. For single split units, the working conditions shall be as specified in Table 6; the rest shall be carried out in accordance with the test method of the cooling at maximum operation in GB/T 7725-2004.

6.8 Test of cooling at minimum operation Completely close the ventilation gate (if any), that exchanges the indoor and outdoor air, of the air conditioner. Adjust its set temperature, fan speed, guide grille to the state that is most likely to cause the evaporator to freeze. Under the cooling work conditions at minimum operation as specified in Table 6, at the rated voltage and frequency, start the air conditioner to run to a stable condition; then continue operation for 4 hours.

6.9 Condensation conditions Adjust the air conditioner's temperature controller, fan speed, damper, guide grille to the most condensable state, without violating the manufacturer's requirements, to perform cooling operation; make it reach the condensation conditions as specified in Table 6. The air conditioner runs continuously for 4 h.

6.10 Test of condensate removal ability Adjust the air conditioner's temperature controller, fan speed, damper, guide grille to the most condensable state. Operate it according to the condensate For packaged units, place the unit in a room. For the air conditioner which is equipped with automatic defrosting device, adjust the temperature controller, fan speed, air door, guide grille to such state, that the heat exchanger is most frost-prone. After stable operation according to the defrost conditions specified in Table 6, continue to run for two complete defrost cycles or run continuously for 3 hours (the total time of the test shall start