



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

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**Household refrigerating appliances - Refrigerators
(English Translation)**

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1 Subject Content and Application Scope

This Standard specifies terms, product classification, technical specifications, test methods and inspection rules, as well as marking, packaging, transportation and storage of refrigerators.

This Standard is applicable to the vapor compression household refrigerator with enclosed electric machine below 500L (hereinafter referred to as "refrigerator"). It does not apply to refrigerators for special purpose.

2 Normative References

GB 191 Packaging - Pictorial Marking for Handling of Goods GB 1019 General Requirements for Packings of Household Electrical Appliances GB/T 2423.17 Basic Environmental Testing Procedures for Electric and Electronic Products - Test Ka. Salt Mist GB 2828 Sampling Procedures and Tables for Lot-by-lot Inspection by Attributes (Apply to Inspection of Successive Lots or Batches) GB 2829 Sampling Procedures and Tables for Periodic Inspection by Attributes (Applicable to Inspection of Stability for Productive Process) GB 3785 Electric, Sonic Properties and Measuring Methods for Sound Level Meters GB/T 4214 Household Appliances - Determination of Sound Pressure Level of Noise GB 4706.1 Safety of Household and Similar Electrical Appliances - General Requirements GB 4706.13 Safety of Household and Similar Electrical Appliances -Particular Requirements for Refrigerators, Food-Freezers and Ice-Makers GB 4798.1

Environmental Conditions Existing in the Application of Electric and Electronic Products -
Storage GB 4798.2 Environmental Conditions Existing in the Application of Electric and
Electronic Products - Transportation

3.1 Household refrigerator (hereinafter referred to as "refrigerator")

An insulated cabinet that has suitable volume and equipment for household use, cooled by one or more energy-consuming means, and having one or more compartments intended for the preservation of food; it includes refrigerator, refrigerator-freezer and freezer.

3.2 Refrigerator

An insulated cabinet that has suitable volume and equipment for household use, cooled by one or more energy-consuming means, and having one or more compartments, in which there is at least 1 refrigerator.

3.3.1 Fresh food storage compartment

The compartment that is intended for the storage of unfrozen food which may be itself divided into sub-compartments, and in which the temperatures can be maintained above 0°C.

3.3.2 Cellar compartment

The compartment that is intended for the storage of particular foods or beverages at a temperature warmer than that of the fresh food storage compartment.

3.3.3 Low-temperature compartment

A compartment which may be either.

a. an ice-making compartment, or b. a frozen food storage compartment.

A refrigerator may have one or several low-temperature compartments. Alternatively, it may have no low-temperature compartment.

3.3.4 Ice-making compartment

The compartment that is intended specifically for the freezing and storage of ice-cubes.

Total storage volume stated by the manufacturer.

3.4.6 Shelf

Member with certain mechanical strength, on which food can be placed.

It may be either fixed or movable.

3.4.7 Load limit

Surface enveloping the frozen food storage volume.

3.4.8 Load limit line

Permanent mark(s) indicating the effective volume limit of frozen food storage.

3.5.1 Energy consumption

Consumption of a refrigerator over a period of 24 h, running under stable operating conditions at an ambient temperature of + 25°C (class SN, class N and class ST refrigerators) or + 32°C (class T refrigerators), measured under the conditions specified in 6.2.3.

3.5.2 Rated energy consumption

Energy consumption stated by the manufacturer.

3.5.3.1 Fresh food storage temperature, t_m

Arithmetical mean of temperatures t_1 , t_2 and t_3 which are the internal average temperatures measured in copper cylinders (see 6.1.4.1) placed at given points in the fresh food storage compartment as specified in 6.1.5, that is, the arithmetical mean (or arithmetical mean of temperature when starting up or shutting down) of the highest temperature and the lowest temperature at these points during a complete control cycle (see 3.5.6).

3.5.3.2 Frozen food storage temperature

The highest temperature of the warmest "M" package of a load placed in storage as specified in 3.5.5 and 6.1.6.1.

3.5.3.3 Cellar compartment temperature, t_{cm}

Arithmetical mean of temperature t_{c1} , t_{c2} and t_{c3} (as appropriate, see figure 101, which are the mean internal temperatures measured in copper or brass cylinders (see 6.1.4.1) placed at given points in the cellar compartment as specified in 6.1.5, that is, the 3.5.6 "M" package A test package in accordance with 6.1.2, of dimensions 50 mm x 100 mm x 100 mm, fitted with a temperature sensor at its geometric center.

3.5.7 Control cycle

Period between two successive starts, or two successive stops, of a refrigerating system, or of a part of a system, under stable operating conditions.

3.5.8 Stable operating conditions

In the case of cyclic operation of a refrigerating system, or of a part of a system, including any automatic defrost periods, stable operating conditions are deemed to be reached when, for each of the "M" packages and copper or brass cylinders, the temperatures at all corresponding points during successive operating cycles agree within ± 0.5 K and there is no marked trend away from the mean temperature during a period of 24 h.

In the case of continuous operation of a refrigerating system, or of a part of a system, stable operating conditions are deemed to be reached when, although there may be a certain variation in temperature, the increase or decrease in the temperature of all the "M" packages and copper or brass cylinders does not exceed 0.5 K during a period of 18 h.

3.5.9 Percentage running time, R

Under given conditions of ambient temperature and of internal storage temperature, the ratio.

Where.

R - the percentage running time;

d - the duration of the refrigerating system operation during a whole number of cycles;

D - the total duration of the cycles.

3.5.10 Cooling speed

For refrigerator is running continuously under the condition of no load at specified test conditions, and the environment temperature is 32°C, required time of the instantaneous temperature of each compartment can reach those specified in Table 1.

3.5.11 Ice-making capacity

Quantity of ice the refrigerator is capable of producing within 24 h, or the time $100dR = x$ necessary for the freezing of the water in the ice trays supplied with the appliance.

3.5.12 Ambient temperature

Temperature in the space surrounding the appliance under test. It is the arithmetical average of the mean value of temperatures t_{a1} , and t_{a2} , measured at two points located 350mm from the vertical centerline of the side walls of the appliance at 1m above the floor line.