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Thermal insulation containers - Foam boxes

保温容器 保温箱

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Capacity requirements and test methods, drop test of this Standard shall refer to EN 12546-2:20000.

This Standard was proposed by China Light Industry Federation.

This Standard shall be under the jurisdiction of National Mouth Glass Enamel Standardization Center of China.

The drafting organizations of this Standard: Pinghu Yingru Insulation Container Industry Co., Ltd., Donghua University, National Eyewear Break Bad Claw Porcelain Version of The Child Supervision and Inspection Center, Ningbo Huasheng Electric Appliance Co., Ltd., Yuyao Kewang Cold Storage Technology Co., Ltd., Pinghu Product Private Enterprises Supervision and Inspection.

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Thermal insulation containers - Foam boxes

1 Scope

This Standard specifies the terms and definitions, requirements, test methods, inspection rules, marks, packaging and storage of foam boxes.

This Standard is applicable to thermal insulation containers including insulation (cold storage) boxes and barrels for storage of pre-packaged food and/or beverages, which use plastic inner and outer first filled with insulation material to achieve heat insulation effect.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 2035, *Terms and definitions for plastics* (GB/T 2035-2008, ISO 472:1999, IDT)

GB/T 2828.1, *Sampling procedures for inspection by attribute - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection* (GB/T 2828.1-2012, ISO 2859-1:1999, IDT)

QB/T 2919, *Case and bag - Test method for resistance to fatigue of pull rod*

QB/T 2920-2007, *Case and bag - Test method for traveling*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 2035 and the following ones apply.

3.1 foam box

a plastic container with an inner container (inner liner) and an outer protective layer (shell) or an inner and outer layer integrally formed with a layer of filler in the middle to reduce heat transfer between the outer and the inner container

NOTE Usually, incubators are used to store pre-packaged food and/or beverages, etc.:

insulation barrels are used for direct storage of drinks into water, and direct drinking through the water switch.

3.2 nominal capacity

nominal internal available capacity

NOTE In liters (L).

3.3 sealing cover

a container cover to prevent the beverage, water and other liquid leakage, playing sealing effect

NOTE Normally, the sealing cap is provided with a sealing ring.

3.4 drainage port

a hole or nozzle set to discharge the water inside the insulation (cold storage) box, which can be sealed in non-draining state

3.5 color heterogeneity

non-design changes in color on the same piece

[GB/T 2035-2008, 2.173]

3.6 flash

flashing

- a) during the filming, a portion of the molten material which escapes from the material chamber;
- b) excessive plastic that exudes between mold joint surfaces.

[GB/T 2035-2008, 2.402]

3.7 orange peel

irregular pitting surface which looks pimple, pinhole and pit accumulated state, similar to orange peel

[GB/T 2035-2008, 2.659]

3.8 dished

a symmetry distortion defect displayed on the flat or curved part of a plastic product, which usually appears dished

5.5.1 Pour 1/3 of the nominal capacity of water into the sample. Cover the sample lid. Lock the lock. In the normal use state, shake the sample up and down at a distance of (200 ± 50) mm for 25 times in the time of (15 ± 2) s. Check whether the switch, the switch connection, the drain, the seal and other part is sealed, with or without leakage.

5.5.2 Fill the sample with water. Flat it on the platform with paper. After 30 min, check for leakages on all parts.

5.6 Handle fastness

In the sample, load a weight 2.5 times the mass of the water (equally distributed at the bottom of the sample). Lift the handle to make the sample off the ground. After 30 min, check the state of the handle.

For double handle or even handle sample, balanced lifting shall be carried out.

5.7 Rod resistance to fatigue

Carry out the test in accordance with QB/T 2919.

5.8 Moving wheel fastness

5.8.1 Static load test: in the sample, load a weight 2.5 times the nominal mass of water mass. Set the moving wheel down to the ground. Lift the other end of the handle up so as to make the bottom of the sample and the ground into a $(45 \pm 2)^\circ$ angle.

5.8.2 Exercise test: in the sample, load a weight of 1/2 of full water mass. Carry out the test according to Method A in QB/T 2920-2007. After 4 km travel, check the moving wheel and the wheel axle.

5.9 Drop test

5.9.1 Principle

Before the test, install the sand in the sample, so as to make the sample fall from the high-altitude and hit the base plane, the corners of the bottom edge, and assess the extent of its damage.

5.9.2 Test equipment and materials used

- a) Concrete (or similar) ground;
- b) Sand: sand can be installed in polyethylene or cotton bag, to prevent the center of gravity shift;
- c) Lifting equipment.

- b) great changes in material, formula, technology which may affect product performances;
- c) in normal production, after regular or accumulation of a certain amount of production, a cycle test should be carried out (usually 6 months);
- d) production resumed after discontinued production of more than one year;
- e) required by national quality supervision organization.

6.2.2 During the type inspection, it shall extract more than 5 products at random from the products of the initial batch product as samples. Carry out the inspection items specified in Clause 4 one by one. The type inspection shall be determined as qualified after all items are qualified. The inspection methods are in accordance with the provisions of Clause 5.

7 Marks, packaging and storage

7.1 Marks

7.1.1 Each piece of product shall be indicated with the following information on its marks:

product name, liner material, product function (insulation / cold storage / sealing / direct storage of food / storage of pre-packaged food), nominal capacity, enterprise's name, address, standard number of implementation, production date or batch number.

7.1.2 Other information

It shall provide information on safe use, cleaning methods, precautions, available accessories, spare parts and replacement parts.

7.2 Packaging

7.2.1 The packaging of the product should be clearly marked on the surface, indicating the manufacturer or trademark.

7.2.2 The product packaging should be firm so as to prevent surface damage.

7.3 Storage

7.3.1 The storage shall be dry, ventilated and moisture-proof.

7.3.2 The stacking height shall not exceed 3.5 m. It shall be stacked neatly to avoid collapse.

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