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Plastic Refuse Sack

塑料垃圾袋

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Standardization Administration of the People's Republic of China.

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Plastic Refuse Sack

1 Scope

This Standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation and storage of plastic refuse sack.

This Standard is applicable to plastic refuse sacks made from films with resin as the main raw material and processed through sack-making processes, for example, heating sealing or bonding.

2 Normative References

Through the reference in this Standard, the clauses of the following documents become clauses of this Standard. In terms of references with a specified date, all the subsequent modification sheets (excluding the corrected content) or revised versions are not applicable to this Standard. However, the various parties that reach an agreement in accordance with this Standard are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specified date, the latest version is applicable to this Standard.

GB/T 1040.3-2006 *Plastics - Determination of Tensile Properties - Part 3: Test Conditions for Films and Sheets* (ISO 527-3:1995, IDT)

GB/T 2828.1-2003 *Sampling Procedures for Inspection by Attribute - Part 1: Sampling Schemes Indexed by Acceptance Quality Limit (AQL) for Lot-by-lot Inspection* (ISO 2859-1:1999, IDT)

GB/T 2918-1998 *Plastics - Standard Atmospheres for Conditioning and Testing* (idt ISO 291:1997)

GB/T 6672-2001 *Plastics Film and Sheeting - Determination of Thickness by Mechanical Scanning* (idt ISO 4593:1993)

3 Classification

In accordance with purpose, plastic refuse sacks may be divided into refuse sacks for unclassified garbage collection and refuse sacks for classified household garbage collection.

In accordance with shape, refuse sacks may be divided into standard plastic refuse sacks, plastic refuse sacks with a drawstring, four-ear plastic refuse sacks, two-ear

The tensile strength of drawstring shall be greater than or equal to 40 N.

5.4.2 Hanging test

After 10 refuse sack samples are tested, the number of unbroken samples shall be greater than or equal to 9.

6 Test Methods

6.1 Sampling

Take a sufficient number of samples from the plastic refuse sack for testing.

6.2 Sample Conditioning and Test Environment

Conduct sample conditioning and tests under the standard environment (temperature 23 °C ± 2 °C, humidity 50% ± 10%) specified in GB/T 2918-1998. The duration of conditioning shall be not less than 4 h.

6.3 Thickness Deviation

Open a plastic refuse sack; cut it open, then, spread it out on one side. Use a thickness gauge to measure the thickness of film on one side. In accordance with the stipulations of GB/T 6672-2001, conduct the measurement. Along the width direction of the plastic refuse sack, uniformly measure 8 points. In accordance with Formula (1) and Formula (2), use the recorded data to calculate the limit deviation and average deviation of thickness. When the plastic refuse sack has embossed lines or formed threads, the embossed lines or formed threads shall be flattened, then, the thickness of the flattened area shall be measured.

$$\Delta e = e_{\text{min or max}} - e_0 \qquad \cdots\cdots(1)$$

Where,

Δe---limit deviation of thickness, expressed in (mm);

$e_{\text{min or max}}$---actually measured minimum or maximum thickness, expressed in (mm);

e_0---nominal thickness, expressed in (mm).

$$\Delta \bar{e} = \frac{\bar{e} - e_0}{e_0} \times 100 \qquad \cdots\cdots(2)$$

Where,

$\Delta\ \bar{e}$---average deviation of thickness, expressed in (%);

than or equal to 520 mm, use a 38 mm ball for observation. When the effective width *P* is greater than or equal to 520 mm, use a 61 mm ball for the test. If the ball does not pass through the breakage, then, it signifies that the refuse sack is qualified; if the ball passes through the breakage, then, it signifies that the refuse sack is disqualified.

6.8 Tensile Resistance of Refuse Sacks with a Drawstring

6.8.1 Tensile strength of drawstring

Directly take the drawstring as a sample string. In accordance with GB/T 1040.3-2006, conduct the test; the test rate is 500 m/min. Test 10 samples; take the average value of the results.

6.8.2 Hanging test

In accordance with Table 6, put in the load. After sealing, lift the drawstring (see Figure 2 for the lifting hook); it shall not be kinked. Place the loaded refuse sack on the equipment, as it is shown in Figure 3. The flat panel, on which, the refuse sack is placed, shall be kept at a sufficient distance from the ground, so as to ensure that the refuse sack will not touch the ground during the test (except for the damage of refuse sacks).

Hang the drawstring of the refuse sack on the hook without stretching.

Make the plate instantly fall off, so that the sample freely falls.

When the following circumstances occur, the refuse sack shall be determined as disqualified in the hanging test.

a) The drawstring is disconnected from the refuse sack from the joint;

b) The drawstring is broken, or the sealing area is broken;

c) The hanged area is broken.

See Figure 4 for some examples of disqualification in the hanging test.

Test 10 samples.

7.2.1 Exit-factory inspection

Exit-factory inspection items are appearance, size deviations, anti-dropping and anti-leakage performance.

7.2.2 Type inspection

Type inspection items are all items in the requirements. Under one of the following circumstances, type inspection shall be conducted:

a) Trial production and model appraisal when new products or old products are transferred to another factory for production;

b) After formal production, when there are relatively significant changes in structure, material and process;

c) After normal production, type inspection shall be conducted at least once a year;

d) When production is suspended for half a year, then, resumed;

e) When there are relatively significant differences between the exit-factory inspection result and the previous type inspection;

f) When a national quality supervision and inspection institution proposes a request for type inspection.

7.3 Sampling Scheme

7.3.1 Appearance and size deviations

The exit-factory inspection shall comply with the sampling procedures by attribute in GB/T 2828.1-2003. The secondary normal sampling with the inspection level (IL) being the general inspection level-II and the acceptance quality limit (AQL) being 6.5 is used. The batch size, sampling size and number for determination are shown in Table 7. Each unit of packaging is considered as a sampling unit; unit packaging may be a box, bundle, bag and piece, etc. During the test, randomly take a sample from each unit of packaging for inspection.

7.4.1.2 Anti-leakage and anti-dropping performance, and tensile resistance of refuse sack with a drawstring

When there are disqualified items in anti-leakage and anti-dropping performance, and tensile resistance of refuse sack with a drawstring, take double samples from the original batch to respectively conduct re-inspection of the disqualified items. If the re-inspection results are all qualified, then, it shall be determined as qualified in the item, otherwise, it shall be determined as disqualified.

7.4.2 Determination of qualified batch

If the inspection results of all inspection items are qualified, then, the batch shall be determined as qualified.

8 Marking, Packaging, Transportation and Storage

8.1 Marking

The packaging box and bag shall be marked with:

a) Serial No. of this Standard;

b) Product name;

c) Quantity of products;

d) Specifications and sizes: effective width × effective length × nominal thickness, expressed in (mm);

e) Name of manufacturer;

f) Production date and storage period;

g) Texture or type of product;

h) Attached quality inspection certificate.

8.2 Packaging

Daily plastic bags are generally packed in plastic films or cartons, or, in a mode determined by the demand-side and the supply-side through negotiation.

For refuse sacks with a drawstring, when the drawstrings are separated from the refuse sacks, the number of drawstrings in the packaging box shall be not less than the number of refuse sacks being packed.

8.3 Transportation

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