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Replacing GB/T 6544-1999, GB/T 16718-1996, GB/T 5034-1985

Corrugated fiberboard

瓦楞纸板

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Foreword

This standard replaces GB/T 6544-1999 “Corrugated fiberboard”, GB/T 16718-1996 “Packing material - Heavy duty corrugated fiberboard” and GB/T 5034-1985 “Corrugated fiberboard for packaging of export product”. This standard is a revision of GB/T 6544-1999, GB/T 16718-1996 and GB/T 5034-1985. The above three standards are integrated in the revision process.

As compared with GB/T 6544-1999, GB/T 16718-1996 and GB/T 5034-1985, the main changes of this standard are as follows:

- USE the normative reference instead of reference standards. DELETE GB/T 6548 “Determination of ply adhesive strength for corrugated fiberboard”. DELETE GB/T 4857.2-1992 “Packaging - Transport packages - Temperature and humidity conditioning”. DELETE GB/T 16717-1996 “Packing containers - Heavy duty corrugated box” (clause 2 of the 1999 version; clause 2 of the 1996 version; clause 2 of this version);
- ADD the definition and code of fluted paper, triple-wall corrugated fiberboard. ADD the definition of minimum combined weight of facings including center facings of double-wall and triple-wall board. MODIFY the English expression of single-wall corrugated fiberboard and double-wall corrugated fiberboard. DELETE the definition and code of the heavy-duty corrugated fiberboard, composite corrugated fiberboard, tetra-wall, double-wall, six-wall, triple-wall composite/heavy-duty corrugated fiberboard (clause 3 of the 1999 version; clause 3 of the 1996 version; clause 1 of the 1985 version; clause 3 of this version);
- ADD the structure and classification of corrugated fiberboard (clause 4 of the 1999 version; clause 1 of the 1985 version; clause 4 and Appendix A of this version);
- ADD (MODIFY) the type of corrugated fiberboard. MODIFY the requirements for the index (Table 1 of clause 4 of the 1999 version; clause 5 of the 1996 version; clause 2 of the 1985 version; Table 1 of clause 4 of this version);
- ADD the structure and symbolic representation of the corrugation type of the corrugated fiberboard, both the number of corrugations and the width index of corrugation (Table 2 in clause 4 of the 1999 version; clause 5 of the 1996 version; clause 2 of the 1985 version; Figure 1 and Table 2 of this version);
- MODIFY the requirements for the ply adhesive strength of corrugated fiberboard (clause 5 of the 1999 version; clause 2 of the 1985 version; clause 5 of this version);

Corrugated fiberboard

1 Scope

This standard specifies the terms, definitions and codes, structures, classifications and grading, technical requirements, test methods, inspection rules and marking, packaging, transport and storage of corrugated fiberboard.

This standard applies to corrugated fiberboard for outer packaging.

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 450 Paper and board - Sampling for testing (GB/T 450-2002, eqv ISO 186:1994)

GB/T 462 Paper and board - Determination of moisture content (GB/T 462-2003, ISO 287:1985, MOD)

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 6545 Corrugated fiberboard - Determination of bursting strength (GB/T 6545-1998, eqv ISO 2759:1983)

GB/T 6546 Corrugated fiberboard - Determination of edgewise crush resistance (GB/T 6546-1998, idt ISO 3070:1987)

GB/T 6547 Corrugated fiberboard - Determination of thickness (GB/T 6547-1998, eqv ISO 3034:1991, EQV)

GB/T 10342 Paper - Package and mark

GB/T 10739 Paper, board and pulps - Standard atmosphere for conditioning and testing (GB/T 10739-2002, eqv ISO 187:1990)

double wall and triple wall board

The sum of the quantitative amounts of paper or fiberboard that form the corrugated fiberboard except for the fluted paper.

3.2 Code

The code-related provisions of this standard are as follows:

S - Single-wall corrugated fiberboard (three-layer corrugated fiberboard);

S - 1.1 ~ S - 1.5 - Category 1 ~ category 5 of the superior grade of single-wall corrugated fiberboard, respectively;

S - 2.1 ~ S - 2.5 - Category 1 ~ category 5 of the qualified grade of single-wall corrugated fiberboard, respectively;

D - Double-wall corrugated fiberboard (five-layer corrugated fiberboard);

D - 1.1 ~ D - 1.5 - Category 1 ~ category 5 of the superior grade of double-wall corrugated fiberboard, respectively;

D - 2.1 ~ D - 2.5 - Category 1 ~ category 5 of the qualified grade of double-wall corrugated fiberboard, respectively;

T - Triple-wall corrugated fiberboard (seven-layer corrugated fiberboard);

D - 1.1 ~ D - 1.4 - Category 1 ~ category 4 of the superior grade of triple-wall corrugated fiberboard, respectively;

D - 2.1 ~ D - 2.4 - Category 1 ~ category 4 of the qualified grade of triple-wall corrugated fiberboard, respectively.

4 Structure, classification and grading

4.1 Structure

The structure of corrugated fiber board is as specified in Appendix A.

4.2 Classification

The single-wall corrugated fiberboard and double-wall corrugated fiberboard are classified into category 1 ~ category 5 according to their minimum combined weight of facings, including center facings. The triple-wall corrugated fiberboards are classified into category 1 ~ category 4 according to their minimum combined weight of facings, including center facings.

4.3 Grading

6 Test methods

6.1 The thickness shall be measured in accordance with the provisions of GB/T 6547.

6.2 The length and width are measured by a steel tape measure or ruler which is accurate to 1 mm.

6.3 The edgewise crush strength shall be tested in accordance with the provisions of GB/T 6546.

6.4 The bursting strength shall be tested in accordance with the provisions of GB/T 6545.

6.5 Ply adhesive strength shall be as specified in Appendix B.

6.6 The moisture of the corrugated fiberboard as delivered is in accordance with the provisions of GB/T 462.

6.7 The appearance quality of corrugated fiberboard shall be assessed by visual inspection. The test of maximum warpage shall be carried out after horizontal placement of corrugated fiberboard without external force, the distance from the highest point to the horizontal plane is taken as the measured value.

7 Inspection rules

7.1 The quantity of products as delivered for one time forms a batch, the unit of product is piece.

7.2 The supplier shall ensure that the exit-factory products meet the requirements of this standard and are accompanied by a quality certificate.

7.3 The sampling plan for handover inspection shall be carried out in accordance with the provisions of GB/T 2828.1, the unit of sample is piece. Acceptance quality limit (AQL): The AQL for bursting strength and edgewise crush strength is 4.0; the AQL for ply adhesive strength, thickness, delivery moisture, length, width, appearance quality is 6.5. It uses the secondary sampling of normal inspection whose inspection level is special inspection level S-2. The sampling plan is as shown in Table 3.

Appendix B

(Normative)

Determination of the ply adhesive strength of corrugated fiberboard

B.1 Scope

This Appendix specifies the method for determining the ply adhesive strength of corrugated fiberboard.

This Appendix is applicable to determine the ply adhesive strength of various types of corrugated fiberboard.

B.2 Terms and definitions

The following terms and definitions apply to this Appendix.

B.2.1

Ply adhesive strength

Under the specified test conditions, the force required to separate the unit length of the corrugated fiberboard, expressed in Newton per meters (N/m).

B.3 Principle

Insert the needle-shaped accessory between the corrugation paper and the facing (inner) paper (or between the corrugation paper and the intermediate paper), then apply pressure to the needle-shaped accessory on which the specimen is inserted, to make it subject to relative movement, until the corresponding part is separated.

B.4 Instruments

B.4.1 Compressive strength tester

It shall meet the technical requirements of the compressive strength tester as specified in GB/T 6546.

B.4.2 Sampling device

It shall meet the cutting knife and requirements as specified in GB/T 6546.

B.4.3 Accessories

The accessory consists of the upper part accessory and the lower part

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