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GB/T 7706-2008

Replacing GB/T 7706-1987

The relief prints for decorating

凸版装潢印刷品

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Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

Standardization Administration of the PRC.

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Foreword

This standard replaces GB/T 7706-1987 “The relief prints for decorating”.

As compared with GB/T 7706-1987, the main changes of this standard are as follows:

- MODIFY the standard structure in accordance with GB/T 1.1-2000;
- MODIFY appropriately the "appearance", "finished product specification size deviation", "overprint error" and "field printing requirements" in the standard;
- ADD the "ink layer fastness" requirements in the standard.

Appendix A of this standard is a normative appendix.

This standard was proposed by the General Administration of Press and Publication.

This standard shall be under the jurisdiction of the National Printing Standardization Technical Committee.

The drafting organizations of this standard: Shanghai Packaging Paper (Group) Co., Ltd., National Light Industry Packaging and Decorating Printing Products Quality Supervision and Testing Shanghai Branch, National Light Industry Packaging Standardization Center, Shanghai Zhengwei Printing Co., Ltd., Shanghai Jizhen Printing Factory Co., Ltd., China Packaging Technical Association Packaging and Printing Committee.

The main drafters of this standard: Zheng Shaonan, Chen Qixiang, Cai Heping, Wei Jiahong, Gao Huijing, Wang Guoxiong.

This standard was firstly issued in 1987.

The relief prints for decorating

1 Scope

This standard specifies the classification, requirements, inspection methods, inspection rules, marking, packaging, transportation, storage, and so on, of the relief prints for decorating.

This standard applies to the paper and plastic film decoration printed products as produced through relief prints (except for flexo printing) technology.

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 2792-1998 Test method for peel strength of pressure-sensitive tape at 180° angle (eqv JISZ 0237:1991)

GB/T 2828.1 Sampling procedures for inspection by attributes - Part 1: Sampling scheme indexed by acceptance quality limit (AQL) for lot-by-lot inspection (GB/T 2828.1-2003, ISO 2859-1:1999, IDT)

GB/T 17934.1-1999 Graphic technology - Process control for manufacture of half-tone color separations, proof production prints - Part 1: Parameters and measurement methods (eqv ISO 12647-1:1996)

GB/T 18722 Graphic technology - Application of reflection densitometry and colorimetry to process control in graphic arts (GB/T 18722-2002, eqv ISO13656:2000)

CY/T 3 Color assessment lighting and observation condition

ISO 13655 Spectral measurement and colorimetric computation for graphic arts images

ISO 14981 Optical, geometrical and metrological requirements for reflection densitometers for graphic arts use

5.4.1.2 Text printing shall be clear and complete, and free from incompleteness or distortion, AND the letter less than 5.5P (No. 7) shall not affect the word reading.

Note: P- Point, 1P is equal to about 0.35 mm.

5.4.1.3 The lattice point shall be clear and uniform AND free from defects.

5.4.1.4 The printing prime section shall be free from streaks or ghosting.

5.4.1.5 The printing prime section shall be free from the stains which can be visible by naked eyes.

5.4.1.6 The printing colors shall comply with the requirements of the printed samples.

5.4.1.7 The film laminating shall be free from wrinkles, bubbles, etc., AND the edge of the film laminating shall not be tilting.

5.4.1.8 The alumite foil shall be flat, solid, AND free from discoloring, plate pasting, hot foil pinhole, incompleteness, burr, or scratches.

5.4.1.9 The coating shall be flat and solid, AND free from disclosing or stain spots.

5.4.2 Ordinary products

5.4.2.1 The finished product shall be clean AND free from obvious scratches, stains, or incompleteness.

5.4.2.2 The text printing shall be clear and complete AND free from obvious incompleteness or deformation; AND the letter less than 5.5 P (Number 7) shall not affect word reading.

Note: P-Point, 1 P is equal to about 0.35 mm.

5.4.2.3 The lattice point shall be clear and uniform AND free from defects.

5.4.2.4 The printing prime section shall be free from streaks or ghosting.

5.4.2.5 The prime section of each finished product shall not have stain spot of diameter > 0.4 mm OR more than 3 stains of diameter ≤ 0.4mm.

5.4.2.6 The printing color shall basically comply with the requirements for the printed sample.

MEASURE the blank width (accurate to 0.1 mm) at any symmetrical section of the left and right (or upper and lower) part of the sample; then USE the equation (1) to calculate the position deviation of the finished product pattern.

$$\delta = \frac{|d_1 - d_2|}{2} \qquad \cdots\cdots(1)$$

Where:

δ - Position deviation of the finished product pattern, mm;

d_1, d_2 - Blank width (accurate to 0.1 mm) at any symmetrical section of the left and right (or upper and lower) part of the sample, mm;

6.4 Overprint error

PLACE the test specimen under the observation light source as specified in 6.1.3. USE the 20-fold scale microscope of accuracy 0.01 mm to respectively measure the overprint errors (3 points respectively) between any two colors at the prime section and subprime section of the test specimen; respectively TAKE the maximum values and USE them as the overprint errors of the prime section and subprime section of the test specimen.

6.5 Same color density deviation

6.5.1 Instruments

USE the reflection densitometer in accordance with ISO 14981.

6.5.2 Instrument calibration and use method

FOLLOW the provisions of GB/T 18722.

6.5.3 Test procedures

6.5.3.1 During the test, the printed product shall be placed flat on the substrate as specified in GB/T 17934.1-1999, Appendix B “Substrate materials used for reflective density measurement”.

6.5.3.2 As for the instrument calibration and use method, FOLLOW the requirements of 6.5.2.

6.5.3.3 As for the finished product of trimmed size of 135 mm x 195 mm and below, USE the reflection densitometer to measure 1 point respectively at the four corners and middle of the same test specimen of same color; as for the

COMPARE the same batch same color difference of each color of the test specimen, and USE the maximum value as the same batch same color difference of this test specimen.

6.7 Ink layer gloss

6.7.1 Instruments

USE the gloss meter in accordance with ISO 15994.

6.7.2 Instrument calibration and use methods

FOLLOW the provisions of ISO 15994.

6.7.3 Test procedures

6.7.3.1 SELECT smooth test specimen without wrinkle.

6.7.3.2 USE the gloss meter to respectively measure the surface of different color layer of the test specimen; MEASURE 3 points on the color layer area of ≤ 100 cm^2, and MEASURE 5 points on the color layer area of > 100 cm^2.

6.7.3.3 When the measurement result difference of each color gloss of each test specimen is > 5 gloss units, it shall add one times of measurement points.

6.7.4 Test results

CALCULATE the average value of the same color gloss at each point of the test specimen, which is used as the ink layer gloss of this color of this test specimen.

6.8 Ink layer abrasion resistance

6.8.1 Instruments

6.8.1.1 Friction tester

The friction bench uses the rigid plastic of surface roughness not less than 1.60 μm, with a device to fix the test specimen; the friction body uses two pieces of rubbers of thickness 8 mm, hardness 50 Hs ~ 53 Hs, and size 25 mm x 50 mm, with the internal spacing between the two rubbers in 45 mm; the friction test times shall reach to 43 times/min ± 2 times/min AND the travel is about 60 mm. As for the friction tester, SEE Figure 1.

A - Ink layer fastness;

A_1 - Number of cells occupied by the ink layer;

A_2 - Number of cells occupied by the exposed ink layer.

7 Inspection rules

7.1 A group of products of same type, same specification, and same production period under the basically same production conditions for a batch.

7.2 In accordance with GB/T 2828.1 Inspection sampling plan, TAKE sample in the unit of piece. The minimum sampling number of each batch is generally 5.

7.3 Judgment of non-conformance products: INSPECT each product in accordance with the provisions of this standard; if one or more technical indicators fail to reach requirements, this product shall be deemed as non-conformance product.

7.4 Judgment of non-conformance batch: INSPECT each product in accordance with the provisions of this standard; if one or more products are non-conformance products, it shall double the sample for re-inspection. If there is still one or more products are non-conformance products, then this batch shall be deemed as non-conformance batch.

8 Marking, packaging, transportation, and storage

8.1 Marking

Each package shall be affixed with the inspection qualification label on the head, AND marked with the user unit, product name, type and specification, quantity, manufacturer name, production date, and inspector code, etc.

8.2 Packaging

In accordance with the contract requirements OR based on the product volume, mass and quantity, USE solid packaging paper and strapping stripe to tie the product, and USE plastic bag or paper box to pack it.

8.3 Transportation

During transportation, it is not allowed to throw, smash, or tread on the product, AND it shall avoid moisture, sun exposure, rain, heat baking, heavy load, or corrosive gas or liquid.

References

[1] GB/T 9851.1-2008 Terminology of graphic technology - Part 1: Fundamental terms

[2] GB/T 9851.7-2008 Terminology of graphic technology - Part 7: Terms of postpress

[3] GB/T 7705-2008 The offset lithographic prints for decorating

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