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

GB/T 12654-2018

Replacing GB/T 12654-2008

Writing paper

书写用纸

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Foreword

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

This standard replaces GB/T 12654-2008 Writing paper. The main changes with respect to GB/T 12654-2008 are the following: the title of the standard has been revised; brightness has been changed to D65 brightness and the indicator requirements have been revised (see Clause 4, and Clause 4 of the 2008 edition); the requirements for cross-direction folding endurance and for dirt have been revised (see Clause 4, and Clause 4 of the 2008 edition); a requirement for printing surface strength has been added (see Clause 4); and a requirement for the number of splices in reel paper has been added (see Clause 4).

Attention is drawn to the possibility that some of the content of this document may be the subject of patent rights. The issuing body of this document shall not be held responsible for identifying any such patent rights.

This standard was proposed by the China National Light Industry Council and is under the jurisdiction of the National Technical Committee on Paper Industry of Standardization Administration of China (SAC/TC 141).

The drafting organisations of this standard are the Guangdong Provincial Paper Research Institute, Guangzhou Paper Co., Ltd., Shandong Quanlin Paper Co., Ltd. and the China National Pulp and Paper Research Institute Co., Ltd.

The previous editions of the standard replaced by this standard are GB/T 12654-1990 and GB/T 12654-2008.

1 Scope

China's national standard for writing paper - the uncoated paper that goes into forms, exercise books, notebooks, ledgers and everything else meant to be written on rather than

printed. Writing paper is not judged by the criteria that matter for printing paper: what counts is that ink from a pen sits on the surface without spreading or striking through, that the sheet is opaque enough that the writing on the back does not show, that it takes a fold without cracking and that it is clean enough not to catch the nib. Those properties are set by the sizing, the smoothness, the opacity and the dirt count, and they are exactly what this standard controls. The document specifies the product grading and classification, the requirements, the test methods, the inspection rules and the rules on marking, packaging, transport and storage, and it applies to the writing paper used for forms, exercise books, record books, ledgers and other writing purposes. The 2018 edition moved brightness onto the D65 basis and revised its limits, revised the cross-direction folding endurance and dirt limits, and added requirements for printing surface strength and for the number of splices in a reel.

This standard specifies the product grading and classification, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of writing paper.

This standard applies to the paper used for forms, exercise books, record books, ledgers and other writing purposes.

2 Normative references

The following 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 147 Sizes of raw paper for printing, writing and drawing.

GB/T 450 Paper and board - Sampling for testing and determination of machine direction and top and wire sides; GB/T 10739 Pulp, paper and board - Standard atmosphere for conditioning and testing.

GB/T 451.1 Determination of size and deviation of squareness; GB/T 451.2 Determination of grammage; GB/T 451.3 Determination of thickness.

GB/T 456 Determination of smoothness (Bekk method); GB/T 457-2008 Determination of folding endurance; GB/T 460-2008 Paper - Determination of sizing degree.

GB/T 462 Paper, board and pulps - Determination of moisture content of analytical sample; GB/T 1541 Determination of dirt; GB/T 1543 Determination of opacity (paper backing).

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 7974 Measurement of diffuse blue reflectance factor D65 brightness; GB/T 7975 Paper and board - Determination of colour - Diffuse reflectance method.

GB/T 10342 Packaging and marking of paper; GB/T 22365-2008 Paper and board - Determination of surface strength for printing.

3 Product grading and classification

3.1 Writing paper is graded by quality into three grades: superior product, first grade product and qualified product.

3.2 Writing paper is classified into flat paper and reel paper.

4 Requirements

4.1 The technical indicators of writing paper shall comply with the requirements of Table 1. Table 1 lists the grammage and its deviation, the apparent density, the D65 brightness, the opacity, the sizing degree, the smoothness on both sides, the cross-direction folding endurance in two grammage bands, the dirt in two particle size bands, the printing surface strength on both sides and the moisture content on delivery, each against the three quality grades. Three footnotes qualify the table: paper of other grammages may also be produced; D65 brightness is not assessed for coloured writing paper; and the printing surface strength is a reference indicator and is not used as a basis for judging conformity.

4.2 The cut edges of writing paper shall be neat and clean, and free from splits and paper dust.

4.3 The fibre structure of writing paper shall be uniform and the surface of the sheet flat, free from creases, wrinkles, missing pieces, hard lumps and other paper defects that affect use.

4.4 The size of writing paper shall comply with GB/T 147 or with the order contract. The clause also sets a limit on the size deviation and on the deviation of squareness.

4.5 The colour of each batch of writing paper shall be consistent, with no obvious colour difference; the clause sets a limit on the colour difference within one batch.

4.6 Reel paper shall be rewound neatly; the clause limits the number of splices per reel, and requires each splice to be firmly bonded and clearly marked.

5 Test methods

5.1 Sampling is carried out in accordance with GB/T 450, and the conditioning of the samples and the standard atmosphere for testing in accordance with GB/T 10739.

5.2 Paper size and deviation of squareness are determined in accordance with GB/T 451.1.

5.3 Grammage and grammage deviation are determined in accordance with GB/T 451.2.

5.4 Apparent density is determined in accordance with GB/T 451.3.

5.5 D65 brightness is determined in accordance with GB/T 7974.

5.6 Opacity is determined in accordance with GB/T 1543.

5.7 Sizing degree is determined by the ink line method of GB/T 460-2008.

5.8 Smoothness is determined in accordance with GB/T 456.

5.9 Cross-direction folding endurance is determined by the Schopper method of GB/T 457-2008.

5.10 Dirt is determined in accordance with GB/T 1541.

5.11 Printing surface strength is determined by method A of GB/T 22365-2008, using the IGT printing tester (electric type) with a medium viscosity ink.

5.12 The moisture content on delivery is determined in accordance with GB/T 462.

5.13 Colour difference is determined in accordance with GB/T 7975.

5.14 The appearance quality is inspected visually.

6 Inspection rules

6.1 One delivery quantity constitutes one batch, and the clause sets a ceiling on the mass of a batch.

6.2 The manufacturer shall guarantee that the writing paper produced conforms to the requirements of this standard, and a certificate of conformity shall accompany each package of paper on delivery.

6.3 The sampling plan for the delivery and acceptance inspection shall follow GB/T 2828.1. The sample unit for flat paper is the package and for reel paper the reel. The acceptance quality limits are set at one level for opacity, sizing degree and cross-direction folding endurance and at another for grammage, grammage deviation, apparent density, D65 brightness, smoothness, dirt, moisture content on delivery, colour difference within a batch, number of splices and appearance quality. The sampling plan is a normal inspection double sampling plan at special inspection level S-2, and is given in Table 2.

6.4 Determination of acceptability: the number of samples in the first inspection shall equal the first sample size given by the plan. If the number of non-conforming items found in the first sample is less than or equal to the first acceptance number, the batch is deemed acceptable; if it is greater than or equal to the first rejection number, the batch is deemed unacceptable. If it falls between the first acceptance number and the first rejection number, the second sample given by the plan shall be inspected and the non-conforming items found in the first and second samples accumulated. If the cumulative number is less than or equal to the second acceptance number the batch is judged acceptable; if it is greater than or equal to the second rejection number the batch is judged unacceptable.