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

GB/T 4669-2008

**Textiles -- Woven fabrics -- Determination of mass per unit
length and mass per unit area
(English Translation)**

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Foreword

Using re-drafting method, this Standard modifies and adopts ISO 3801.1977 Textile - Woven fabrics - Determination of mass per unit length and mass per unit area (English version).

Major differences between this Standard and ISO 3801.1977 are as follows.

- International standard in normative reference document is replaced by national standard; and GB/T 8107 and GB 9994 are added;
- Preface and introduction of ISO 3801.1977 are deleted;
- Specification of steel ruler "0.5 m" is added;
- The workbench length is changed from 4m to the length meets the measuring requirement;
- Requirements related to metal disc are deleted;
- Preset the humidness as per GB/T 6529;
- The computational formula expression form in method 5 "Determination of small fabric per unit area humidifying mass" is modified;
- Method 6 "Small fabric per unit area dry-out mass and determination of conditioned mass", relevant instrument, and the results calculation are added;

- Reporting the experimental result of each sample in experimental report when multiple samples are experimented is deleted; while "Sample name and specification" is added.

This Standard replaces GB/T 4669-1995 "Determination of mass per unit length and mass per unit area of woven fabric". Major differences between this Standard and GB/T 4669-

1995 are as follows.

- GB 9994 is added in normative reference document;
- Definition is deleted;
- Detailed stipulations on steel ruler, scissors, and workbench are added in the instrument;
- Editing and adjustment are done in sequence and content of Method 1 to 4 in the experimental procedures;
- Round-off in Method 1, 2, 3 4 and 5 result computation is changed to "the result is rounded to units digits as per the regulations in GB/T 8170";

Textile - Woven fabrics - Determination of mass
per unit length and mass per unit area

1 Scope

This Standard stipulated the determination method of mass per unit length and mass per unit area of textile and woven fabrics.

This Standard applies to determination of an entire section or a piece of woven fabrics (including elastic fabric).

2 Normative references

The articles contained in the following documents have become part of this document when they are quoted herein. For the dated documents so quoted, all subsequent modifications (including all corrections) or revisions made thereafter do not apply to this Standard.

However, the parties who reach an agreement according to this Standard are encouraged to study whether the latest versions of these documents may be used. For the undated documents so quoted, the latest versions (including all modification sheets) apply to this

document.

GB/T 4666 Textiles - Woven fabrics - Measurement of length of pieces (GB/T 4666-1995, eqv ISO 3933.1976)

GB/T 4667 Textiles - Woven fabrics - Measurement of width of pieces (GB/T 4667-1995, eqv ISO 3932.1976)

GB/T 6529 Textiles - Standard atmospheres for conditioning and testing (GB/T 6529-2008, ISO 139.2005, MOD)

GB/T 8170 Rules for rounding off of numerical values

GB 9994 Conventional moisture regains of textiles

3.1 Method 1 and 3

For the whole section or a piece of fabric whose humidity can be implemented in standard atmosphere, then, after humidifying, determine the length and mass of the fabric; calculate the humidifying mass per unit length. Or measure the length, breadth, and mass of the fabric; and calculate humidifying mass per unit area.

3.2 Method 2 and 4

If the whole section of fabric cannot be humidified in standard atmosphere, then, after loosing it in average atmosphere, measure the length (breadth) and mass of the fabric; calculate the mass per unit length (area); then correct them with correction factor. The correction factor is decided by cutting a part of the loosen fabric; measure it in the average atmosphere; and measure again in standard atmosphere after humidifying; compare the length (breadth) and mass of the two results.

3.3 Method 5 (humidifying mass per unit area of small fabric)

For small fabric, place it in standard atmosphere and humidify first; cut samples and weigh it as per the stipulated size; calculate the humidifying mass per unit area.

3.4 Method 6 (Dry-out mass and conditioned mass per unit area of small fabric)

For small fabric, cut samples as per the stipulated size; put it into drying oven to dry-out and weigh until the mass is stable; calculate the dry-out mass per unit area. Calculate the

conditioned mass per unit area by combining with the conditioned moisture regain ratio.

4.1 Steel ruler

The division value is cm and mm. Length of 2 m ~ 3 m is used for Method 1, 2, 3, and 4. Length of 0.5 m is used for method 5 and 6.

4.2 Scissors

It can be used to cut the fabric to the stipulated size.

4.3 Balance

It can accurately measure mass of a whole section or a piece of fabric; the accuracy is $\pm 2\%$ the mass of the measured samples. The accuracy of Method 5 is 0.001g, and the accuracy of Method 6 is 0.01g.

4.4 Workbench

The surface is smooth and flat, the width is bigger than the breadth of the measured fabric, and the length meets the measuring requirement.

4.5 Cutter

The accuracy is $\pm 1\%$, and it can cut 10 cm x 10 cm square samples or round samples with Cut five representative samples from non-edge and non-wrinkle parts of the fabric (or as per other stipulations); each sample is about the size 15 cm x 15 cm. If local areas are of obvious different masses per unit area because of large pattern, select integral multiple of samples of complete design of this pattern.

6.7.2 Procedures

Pre-humidify samples according to 6.1. Place the samples in standard atmosphere with no tension for humidifying for at least 24 hours to reach balance. Arrange each sample on the workbench (4.4) in sequence. In proper area, use a cutter (4.5) to cut square samples of 10cm x10cm and round samples of 100 cm²; it is also allowed to cut integral multiple rectangle samples of complete design containing large pattern which meets requirements in 6.7.1; and measure the length and width of the samples.