



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

GB/T 7742.1-2005

**Textiles -- Bursting properties of fabrics -- Part 1: Hydraulic
method for determination of bursting strength and bursting
distension**

(English Translation)

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Foreword

GB/T 7742 "Textiles - Bursting Properties of Fabrics" includes the following two parts.

- Part 1. Hydraulic Method for Determination of Bursting Strength and Bursting

Distension;

- Part 2. Pneumatic Sealing Method for Determination of Bursting Strength and

Bursting Distension.

This Part is Part 1 of GB/T 7742; it is modified in relation to ISO 13938-1:1999

"Textiles - Bursting Properties of Fabrics - Part 1. Hydraulic Method for Determination of Bursting Strength and Bursting Distension".

This part is redrafted according to ISO 13938-1:1999; its differences with ISO 13938-1:1999 are as follows.

- The quoted GB 6529 "Textiles - Standard Atmospheres for Conditioning and

Testing" in normative reference of this Part is established by reference to ISO

139 "Textiles - Standard Atmospheres for Conditioning and Testing"; the quoted

GB/T 19022 is identical to ISO 10012:2003 and thereby replaces the normative reference ISO 10012-1:1992 in ISO standard;

- 6.1.1~6.1.8 of ISO are adjusted as 6.1~6.8 according to the requirements of

5.2.3 "Articles may be set only when there are two or above articles in the same level".

This Part replaces GB/T 7742-1987 "Textiles - Determination of Bursting Strength and Bursting Distension - Diaphragm Method".

This Part has made the following technical modifications to GB/T 7742-1987.

- The standard name is changed to "Textiles - Bursting Properties of Fabrics - Part 1. Hydraulic Method for Determination of Bursting Strength and Bursting Distension"; a comparison description of using two kinds of apparatus is added in the Scope.
- 5 terms. test area, bursting pressure, diaphragm pressure, bursting height and bursting volume and their definitions are added; the definition of bursting distention is modified.
- Requirements for apparatus accuracy are added and modified. The bursting pressure is adjusted to $\pm 2\%$ of full scale from $\pm 1\%$; the bursting height is adjusted to $\pm 1\text{mm}$ from $\pm 0.25\text{mm}$. Bursting volume accuracy does not exceed $\pm 2\%$ is added; the volume increase rate accuracy is $\pm 10\%$.

Textiles - Bursting Properties of Fabrics - Part 1.

Hydraulic Method for Determination of Bursting
Strength and Bursting Distension

1 Scope

This part of GB/T 7742 specifies the hydraulic method of determining textile bursting strength and bursting distension, including two kinds of procedures of determining test specimen bursting property. conditioning and soaking.

This Part uses constant rate pump device to apply hydraulic pressure. Pneumatic sealing method is specified in Part 2 of GB/T 7742.

This Part is applicable to knitted fabric, woven fabrics, nonwovens, laminated fabric and various textiles manufactured from other process.

The available data indicate. when the pressure does not exceed 80kPa, the bursting strength results obtained by adopting hydraulic and pneumatic sealing bursting apparatus have no obvious difference. This pressure range includes most of the property levels of ordinary garments. For special textiles with higher requirements for bursting pressure, hydraulic apparatus is more applicable.

2 Normative References

The following standards contain the provisions which, through reference of this Part of GB/T 7742, constitute the provisions of this Part. For dated reference, the subsequent amendments (excluding correction) or revisions of these publications do not apply.

However, the parties who enter into an agreement according to this Part are encouraged to study whether the latest editions of these documents are applicable.

For undated references, the latest edition of the reference document is applicable to this Part.

GB 6529 Textiles - Standard Atmospheres for Conditioning and Testing

GB/T 6682 Water for Analytical Laboratory Use-Specification and Test Methods

(GB/T 6682-1992, neq ISO 3696.1987)

GB/T 19022 Measurement Management Systems - Requirements for Measurement Processes and Measuring Equipment (GB/T 19022-2003, ISO 10012.2003, IDT)

Liquid volume required for reaching bursting pressure.

3.8

Time to burst

Time required for distending to test specimen breakage.

4 Principle

Clamp the test specimen to extendible diaphragm; apply liquid pressure under the diaphragm and make the diaphragm and test specimen distend. Increase the liquid volume at constant speed till the test specimen breaks; measure the bursting strength

and bursting distension.

5 Test Specimens

Sampling shall be carried out according to product standard requirements or the agreement signed by parties concerned. If there are no requirements in product standard serving as examples, an appropriate method of selecting test area shall be given in Appendix A. The test area shall avoid wrinkles, selvage or area which is unable to represent textiles. Generally, the clamping system used may be subjected to test without cutting the specimen.

6 Apparatus

Measurement confirmation of bursting apparatus shall comply with GB/T 19022.

Bursting apparatus shall meet the following requirements.

6.1 Apparatus shall be possessed of constant volume increase rate in the range of

100cm³/min~500cm³/min; the accuracy is $\pm 10\%$. If the apparatus is not equipped with a device adjusting liquid volume, time to burst $20s \pm 5s$ may be adopted; such situation shall be indicated in the test report.

6.2 When the bursting pressure is larger than 20% of the full scale, its accuracy is $\pm 2\%$ of the full scale.

6.3 When the bursting height is less than 70mm, its accuracy is $\pm 1mm$. At the beginning of the test, the zero point of measurement separation shall be capable of being adjusted in order to adapt to test specimen thickness.

6.4 If the bursting volume may be displayed, its accuracy shall not exceed $\pm 2\%$ of the indicating value.

Note 1: For most textiles, especially knitted fabrics, test area 50cm² is applicable. For fabrics possessed of low

extensibility (according to experience or trial test), such as industry use textiles, the recommended test area is at least