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

GB/T 24218.15-2018

**Textiles-Test methods for nonwovens-Part 15: Determination of
air permeability**

纺织品 非织造布试验方法 第15部分：透气性的测定

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	6
2 Normative References...	6
3 Terms and Definitions...	6
4 Principle...	6
5 Equipment...	7
6 Test Procedures...	7
7 Calculation Results...	8
8 Test Report...	9

Foreword

GB/T 24218 Textiles - Test Methods for Nonwovens can be divided into the following parts.

- Part 1. Determination of Mass per Unit Area;
- Part 2. Determination of Thickness;
- Part 3. Determination of Tensile Strength and Elongation (Strip Method);
- Part 5. Determination of Resistance to Mechanical Penetration (Ball Burst Method);
- Part 6. Absorption;
- Part 8. Determination of Liquid Strike-Through Time (Simulated Urine);
- Part 10. Lint and Other Particles Generation in the Dry State;
- Part 11. Run-off;
- Part 12. Demand Absorbency;
- Part 13. Repeated Liquid Strike-through Time;
- Part 14. Coverstock Wetback;
- Part 15. Determination of Air Permeability;
- Part 16. Determination of Resistance to Penetration by Water (Hydrostatic

Pressure);

--- Part 17. Determination of Resistance to Penetration by Water (Spray Impact);

--- Part 18. Determination of Breaking Strength and Elongation (Grab Method);

--- Part 101. Saline Repellency (Mason Jar Method).

This Part belongs to Part 15 of GB/T 24218.

This Part was drafted as per the rules specified in GB/T 1.1-2009.

This Part uses redrafting method to modify and adopt ISO 9073-15:2007 Textiles - Test Methods for Nonwovens - Part 15. Determination of Air Permeability.

The technical differences and causes between this Part and ISO 9073-15:2007 are as follows.

Textiles - Test Methods for Nonwovens

- Part 15. Determination of Air Permeability

1 Scope

This Part of GB/T 24218 specifies the test methods for determining the air permeability of nonwovens.

This Part is applicable to various nonwovens, including treated or untreated laminated combination nonwovens.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 6529 Textiles - Standard Atmospheres for Conditioning and Testing (GB/T 6529-2008, ISO 139:2005, MOD)

GB/T 19022-2003 Measurement Management Systems - Requirements for Measurement Processes and Measuring Equipment (ISO 10012:2003, IDT)

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Air permeability

Under the specified pressure difference, the rate at which the airflow passes perpendicularly through specified test area.

NOTE: The air permeability is expressed by L/(cm²-s); or other equivalent units.

4 Principle

Under the specified pressure difference, measure the flow rate of airflow cutting die or template (see 5.8) to cut at least 5 pieces of samples with size of 100mmx100mm.

6.2 Humidify to balance the specimen from the normal environment to a standard atmospheric environment conforming to the provisions of GB/T 6529.

6.3 Hold the edge of the specimen to avoid changing the natural state of the test area

of nonwovens.

6.4 Place the specimen on the test head; fix the specimen by the clamping system to

prevent the specimen distortion or edge leakage during the test period. When there is a difference for the air permeability between the front and back side of the specimen, indicate the test surface in the test report. For the coated specimen, place the coating face of the specimen downward (toward the low-pressure side) to prevent the edge gas leakage.

6.5 Turn on the vacuum pump; adjust the air flow rate till reach the required pressure

difference, namely, 100Pa, 125Pa or 200Pa. The test pressure values on some new instruments are digitally preselected; the pressure difference on both sides of the measurement aperture shall be displayed in the selected test unit number for the

benefit of direct reading.

6.6 If using a pressure gauge, read the air permeability value expressed in L/(cm²-s)

till the required pressure value is stable. Other equivalent units may also be used as determined by the mutual agreement between interested parties. When the test fabric is very sparse or very tight, it may be necessary to test other pressure difference in addition to the standard specified pressure difference. The increased pressure difference shall be indicated in the report.

7 Calculation Results

Calculate the air permeability of each specimen according to the Formula (1); the result shall take the arithmetic mean of all specimens; thereof, the test value and arithmetic mean of each specimen shall be rounded off to 3 significant figures. Calculate the coefficient of variation and accurate to 0.1%.

Where.

R - air permeability, in L/(cm²-s);

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