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GB/T 24218.17-2017

**Textiles – Test Methods for Nonwovens
– Part 17: Determination of Resistance
to Penetration by Water (Spray Impact)**

(ISO 9073-17:2008, MOD)

纺织品 非织造布试验方法

第 17 部分：抗渗水性的测定（喷淋冲击法）

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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: Determination of 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 the 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 Force and Elongation at Break (Grab Method);
- Part 101: Saline Repellency (Mason Jar Method).

This Part belongs to Part 17 of GB/T 24218.

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

This Part adopts re-drafting method to modify and use ISO 9073-17:2008 *Textiles – Test Methods for Nonwovens – Part 17: Determination of Resistance to Penetration by Water (Spray Impact)*.

The major technical differences and causes between this Part and ISO 9073-17: 2008

are as follows:

--- For the normative references, this Part adjusts the technical differences, so that adapt to China's technical conditions; the adjusting situations mainly reflect in the Clause 2 "Normative References"; the specific adjustment are as follows:

- Replace ISO 139 by GB/T 6529 which modifies and adopts the international standards (see 7.2);
- Replace ISO 9073-6 by GB/T 24218.6 which modifies and adopts the international standards (see 5.1);
- Add the quotation of GB/T 6682 (see 5.2);
- Delete the quotation of ISO 3951.5.

--- Water specified in 5.2 of this Part shall be "Level-III water" to facilitate to unify the test conditions.

--- The diameter of nozzle hole of (0.990 ± 0.005) mm is added to the Figure 1 of this Part; so that unify the important parameter of tester, and ensure that the test conditions are consistent.

--- The dimension of funnel is added to Figure 2 of this Part; so that unify the important parameter of tester, and ensure that the test conditions are consistent.

--- Replace 7.1 of this Part "Sampling as per the product standard provision or agreement of relative parties" by "Sampling as per ISO 3951.5", which may conform to our test procedures more.

--- Add the provisions on specimen quantity to 7.3 of this Part; so that improve the representativeness and consistency of the test results.

This Part does the following editorial modifications:

--- Modify the terminology in 3.1 of ISO 9073-17: 2008 into "resistance to penetration by water of nonwoven materials";

--- Delete Item e) in 5.1 of ISO 9073-17: 2008; and simplify the Footnote 2) of ISO 9073-17: 2008 into the NOTE in 5.1 of this Standard;

--- Add the NOTE to Clause 8 of this Part "if necessary, report the coefficient of variation".

This Part was proposed by China National Textile and Apparel Council.

This Part shall be under the jurisdiction of National Technical Committee for Standardization of Textiles (SAC/TC 209).

Textiles – Test Methods for Nonwovens

– Part 17: Determination of Resistance to Penetration by Water (Spray Impact)

1 Scope

This Part of GB/T 24218 specifies the test method adopting the spray impact method to determine the resistance to penetration by water of nonwovens.

This Part is applicable to the nonwovens that are expected to have certain degree of water resistance or water repellency.

The test results are related to the water repellency of the fiber raw materials of the nonwovens and the structure & arrangement mode of the 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 6682 Water for Analytical Laboratory Use – Specification and Test Methods (GB/T 6682-2008, ISO 3696:1987, MOD)

GB/T 24218.6 Textiles – Test Methods for Nonwovens – Part 6: Absorption (GB/T 24218.6-2010, ISO 9073-6: 2000, MOD)

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Resistance to penetration by water of nonwoven materials

The ability of nonwovens to resist the penetration by water.

8 – Water droplet collector;

9 – Test stand;

10 – Spring clip with port length of 150mm;

11 – Specimen table putting specimen and absorbent paper;

12 – Baffle.

Figure 2 -- Impact Penetrating Tester Schematic Diagram

6.2 The counterweight spring clip with port length of (150 ± 1) mm; the total mass of it is 454g; it is used for holding the width direction of the specimen.

7 Procedures

7.1 Sampling as per the product standard provisions or relevant agreement.

7.2 Put the sample and absorbent paper in the standard atmosphere specified by GB/T 6529 to humidify and balance. Both sides of the absorbent paper shall contact the air (for instance, hang in the clothes rope). Hold the sample by hand carefully, don't contact any contaminants, such as soap, salt, oil, etc.; which may affect the water penetration.

7.3 Cut 5 specimens with dimension of (175 ± 1) mm $\times$ (325 ± 1) mm from the sample; the specimen length direction is the straight direction of the sample.

7.4 Weigh the initial mass (m_1) of the absorbent paper (5.1), accurate to 0.01g.

7.5 Use the spring clip fixed on the top end of the specimen table to hold in the middle of one specimen end in width direction, so that ensure the specimen is placed onto the specimen table flatly.

7.6 Use the counterweight spring clip (6.2) to hold in the middle of the other end of the specimen.

7.7 Place the absorbent paper with known mass in a centered position below the held specimen (see Figure 2).

7.8 Pour (500 ± 10) mL of water (5.2) at temperature (27 ± 1) °C into the funnel of the instrument; so that it can spray onto the specimen.

7.9 After 2s of the continuous spray water stops flowing, place the water droplet collector (5.6), prevent the remaining water droplets to drop onto the specimen.

7.10 Take off the specimen carefully, and remove the absorbent paper below.

7.11 To avoid the moisture evaporation, immediately measure the mass of the

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