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

GB/T 17633-2019

**Geotextiles and geotextile-related products - Determination of
water flow capacity in their plane**

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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 17633-1998 "Determination of water flow in the plane of geotextiles and related products", and GB/T 17633-

Compared with.1998, the main technical changes are as follows.

--- Revised the scope of the standard, and adjusted the contents of the original standard preface and Chapter 4 notes to Note 1 and Note 2 in the scope (see

Chapter 1, Chapter 1, Preface, Chapter 4, Note);

--- Updated normative references (see Chapter 2, Chapter 2 of the.1998 edition);

--- "Terms and definitions" 3.3 "in-plane permeable flow" modified to "planar water flow" (see Chapter 3, Chapter 3 of the.1998 edition);

--- Adjust Figure 1 of the original standard 5.1 to Figure 2, and add the instrument example of Figure 2b), 2c); the original Figure 2 is adjusted to Figure 1 (see Chapter 5)

Figure 1, Figure 2, Chapter 5 of the.1998 edition, Figure 1, Figure 2);

--- Adjust the original standard 5.1a), 5.1d) as the standard text [see 5.1b), 5.1e),.1998 edition of 5.1a), 5.1d) Note];

--- Increase the instrument description of Figures 2b), 2c) "In order to determine the loss of head pressure, it is recommended in the equipment of Figure 2b) and 2c), in the sample two

Set two pressure gauges at the end, separated by at least 0.3m" [see 5.1g), 5.1f of the.1998 edition);

---Modify the expression only specifies the accuracy of the instrument, "the loading mechanism can apply a constant normal of 20kPa, 100kPa,.200kPa to the sample.

Pressure, accurate to +/- 5%" modified to "the instrument should include a loading device

that can apply a constant normal pressure to the sample,

The pressure value is accurate to $\pm 5\%$ [see 5.1d),.1998 edition 5.1c)];

--- "Measuring Cup" was changed to "Water Flow Measuring Device"; at the same time, the modification of the statement made the terms more clear and clear, "When measuring small flow, it should

Use a balance to measure the water quality to the nearest 1%. Convert to volume. If the flow rate is directly measured by a flow meter, the flow meter

The accuracy should be no less than 5%" modified to "If the water flow is calculated by the volume of water, the accuracy of the cylinder used should be

1%; if the flow rate is directly measured by a flow meter, the accuracy of the flow meter should be no less than 5%, and the meter should be corrected to its accuracy.

5% of the reading; if the water flow is calculated by the mass of the water, it should be accurate to 1%" (see 5.6, 5.6 of the.1998 edition);

--- Increase the "6.1 pick and place requirements" content, the original 6.1, 6.2, 6.3 extended to 6.2, 6.3, 6.4 (see 6.1);

---Quantity and size, correct "sample width at least 2mm" to "sample width at least 0.2m"; to prevent water flow for sealing

Flowing from the loading table and the contact material increases the test requirements for products of different structures, and the length of the sample should be plus

The length of the stage is equal [considering 5.1d)]" is modified to "for rigidly pressurized equipment [see Figure 2a)], the length of the sample

The degree should be equal to the length of the loading station [considering 5.1d)]. For equipment pressurized with a diaphragm [see Figure 2b) and Figure 2c)],

The length of the specimen may be greater than the length of the loading station. " (see 6.3, 6.2 of the.1998 edition);

--- Modify the "wetting agent with 0.1% sodium alkylbenzene sulfonate (volume ratio)" to "wet agent using sodium alkylbenzene sulfonate, with the volume of water

The ratio is 0.1%" (see 7.2, 7.2 of the.1998 edition);

--- Increase "If the water flow is less than or equal to $0.3\text{L}/(\text{m} \cdot \text{s})$, use degassed water, or water storage tank water according to 5.2. If

The water flow rate is greater than $0.3\text{L}/(\text{m} \cdot \text{s})$, tap water can be used directly, and the temperature should be recorded and reflected in the report" (see 7.7, .1998)

Version 7.7);

--- Will "collect at least 0.5L for general materials. For highly permeable materials, collect for at least 5s. For low permeability materials,

The collection time can be limited to 600s or less. "Modified to "The amount of water that should be collected is at least 0.5L, and the collection time is at least 5s, if 600s

If the amount of water collected is less than 0.5L, the amount of water collected at 600s will be recorded" (see 7.9, 7.9 of.1998 edition);

--- Calculation and result expression in the mid-plane water flow q pressure/gradient changed to q_s , g , the unit is adjusted from "m²/s" to "L/(m . s)", increase

"For products with multiple structures, it is advisable to identify repeating units and then convert them to values per meter wide" (see Chapter 8,.1998)

Chapter 8);

--- The conductivity index is widely used in China, increasing the calculation of water conductivity and the conversion formula for water flow in the plane (see 8.1);

--- Add any "abnormalities in the hydraulic characteristics of geotextiles and related products under test" in the test report (see Chapter 9);

--- The calculation formula of the correction factor R_T in Appendix A, "0.337" is corrected to "0.0337" (see Appendix A, Appendix A of the.1998 edition).

This standard uses the redrafting method to modify the ISO 12958.2010 "Determination of the water flow in the plane of geotextiles and related products".

The technical differences between this standard and ISO 12598.2010 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace ISO 2854 with GB/T 4889 modified to adopt international standards;

* Replace ISO 5813 with GB/T 7489 equivalent to the international standard;

* Replace ISO 9862 with GB/T 13760 equivalent to the international standard;

* Replaced ISO 9863-1 with GB/T 13761.1 modified to adopt international standards;

* Replace ISO 10320 with GB/T 14798 equivalent to the international standard;

--- Change the "thermometer, accurate to 0.5 °C" to "thermometer, accurate to 0.2 °C" to make the result record more accurate (see 5.5);

--- Increase the calculation of the hydraulic conductivity and the conversion formula for the water flow in the plane (see 8.1).

This standard has made the following editorial changes.

--- According to the requirements of GB/T 1.1-2009, the scope of the chapter is regulated.

This standard was proposed by the China National Textile and Apparel Council.

This standard is under the jurisdiction of the National Textile Standardization Technical Committee (SAC/TC209).

This standard was drafted. China Textile Standard Inspection and Certification Co., Ltd., Weifang Camel Industrial Co., Ltd., Fujian Chang Geng New Materials Co., Ltd.

Limited Company, Shandong Lude New Materials Co., Ltd., Shanghai Survey and Design Institute Co., Ltd., Zhejiang Water Conservancy Research Institute.

1 Scope

This standard specifies methods for determining the in-plane water flow of geotextiles and related products.

This standard applies to all types of geotextiles and related products, and other in-plane permeable materials are referred to this standard.

Note 1. If the overall surface water flow characteristics of the geotextile and its related products have been predetermined, in order to control the quality of the material, only two methods are to be determined.

Water flow to pressure and two hydraulic gradients.

Note 2. Due to the long-term pressure on the product, it will have a substantial impact on the plane water flow. The method for assessing the compressive creep properties of geotextiles and related products

See ISO 25619-1 for the method.

The long-term flat water flow of geotextiles and related products is evaluated in conjunction with their long-term compression creep performance tests.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Statistical processing of GB/T 4889 data and interpretation and estimation of mean and