

ICS 59.080.70

CCS W59



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

GB/T 17638-2017

Replacing GB/T 17638-1998

**Geosynthetics - Synthetic staple fibers needlepunched
nonwoven geotextiles**

土工合成材料 短纤针刺非织造土工布

Issued on: May 12, 2017

Implemented on: December 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Product Classification, Specification and Code...	6
4 Technical Requirements...	7
5 Test Methods...	9
6 Inspection Rules...	10
7 Packaging, Storage, Transportation and Marking...	11

Foreword

This Standard is drafted in accordance with stipulations in GB/T 1.1-2009. This Standard serves as a replacement of GB/T 17638-1998 Geosynthetics - Synthetic Staple Fibers Needle-punched Nonwoven Geotextiles. In comparison with GB/T 17638-1998, there are several main technical changes as follows:

---GB/T 19978 is added, GB/T 13760 is deleted; ISO 4892.2.1994 and GB/T 4667 are respectively replaced into GB/T 31899 and GB/T 4666 (please refer to Chapter 2; Chapter 2 in Version 1998);

---The representation of product specification is modified from "mass per unit area" into "nominal breaking strength"; the breadth recommendation series is deleted (please refer to 3.2;

3.2 in Version 1998);

---"Nominal breaking strength" is added to product code; mass per unit area and number of manufacturing department are deleted (please refer to 3.3;

3.3 in Version 1998);

---The content of "quality assessment" in Chapter 4 in Version 1998 is adjusted into 6.3 "determination rules"; some content is also modified (please refer to 6.3; Chapter 4 in Version 1998);

---The specification in Table 1 is modified from "11 grades" into "9 grades" (please refer to Table 1; Table 1 in Version 1998);

---4 assessment items are added to Table 1, namely, "thickness deviation rate", "acid and alkali resistance", "oxidation resistance" and "UV resistance"; 1 assessment item is deleted,

namely, "thickness"; "breaking strength" and "elongation at break" are respectively modified into "longitudinal and transverse breaking strength" and "corresponding elongation of nominal breaking strength"; 5 indicators are adjusted, namely, longitudinal and transverse breaking strength, corresponding elongation of nominal breaking strength, bursting strength, mass per unit area deviation rate, and longitudinal and transverse tearing strength (please refer to Table 1; Table 1 in Version 1998);

4.3.6 in Version 1998 are deleted (please refer to

4.3.6 in Version 1998);

---The content of Chapter 6 "inspection rules" is modified (please refer to Chapter 6; Chapter 6 in Version 1998);

---The content of Chapter 7 "packaging, storage, transportation and marking" is modified (please refer to Chapter 7; Chapter 7 in Version 1998). Geosynthetics - Synthetic Staple Fibers Needle- punched Nonwoven Geotextiles

1 Scope

GB/T 17638-2017 is the Chinese national standard on geosynthetics - synthetic staple fibers needlepunched nonwoven geotextiles, in the field of textile and leather technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 12 May 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 December 2017. Classification: ICS 59.080.70, CCS W59. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the product classification, specification, code, technical requirements, test methods, inspection rules, packaging, storage, transportation and marking of synthetic staple fibers needle-punched nonwoven geotextiles. This Standard is applicable to synthetic staple fibers dry-laid and needle-punched nonwoven geotextiles which take synthetic staple fibers as the raw material and needle-punching for reinforcement. Other similar products, for example, staple fibers needle-punched composite geotextiles, can also take this as a reference.

2 Normative References

The following documents are indispensable to the application of this Standard. In terms of references with a specified date, only versions with a specified date are applicable to this

Standard. The latest version (including all the modifications) of references without a specified date is also applicable to this Standard.

GB/T 3923.1 Textiles - Tensile Properties of Fabrics - Part 1. Determination of Breaking Force and Elongation at Breaking Force - Strip Method

GB/T 4666 Textiles - Fabrics - Determination of Width and Length

GB/T 13761.1 Geosynthetics - Determination of Thickness at Specified Pressures - Part 1. Single Layers

GB/T 13762 Geosynthetics - Test Method for the Determination of Mass Per Unit Area of Geotextiles and Geotextile-related Products

GB/T 13763 Geosynthetics - Determination of Trapezoid Tearing Force

GB/T 14799 Geotextiles and Geotextile-related Products - Determination of the Effective Opening Size - Dry Sieving Method

GB/T 14800 Geosynthetics - Static Puncture Test (CBR test)

GB/T 15788 Geotextiles and Geotextile-related Products - Wide-width Tensile Test

GB/T 15789 Geotextiles and Geotextile-related Products - Determination of Water Permeability Characteristics Normal to the Plane, without Load

GB/T 16989 Geosynthetics - Tensile Test for Joints/Seams by Wide-width Strip Method

GB/T 17630 Geotextiles and Geotextile-related Products - Dynamic Perforation Test (Cone-drop test)

GB/T 17631 Geotextiles and Geotextile-related Products - Test Method for Determining the Resistance to Oxidation

GB/T 17632 Geotextiles and Geotextile-related Products - Test Method for Determining the Resistance to Liquids of Acids and Bases

3 Product Classification, Specification and Code

3.1 Product Classification and Variety In accordance with raw material, staple fibers needle-punched nonwoven geotextiles can be divided into polyester, polypropylene, polyamide, polyvinyl and polyethylene fiber. In accordance with structure, staple fibers needle-punched nonwoven geotextiles can be divided into the common type and the composite type. The variety of staple fibers needle-punched nonwoven geotextiles shall be designed by the manufacturing department in accordance with market demand.

3.2 Product Specification The specification of staple fibers needle-punched nonwoven geotextiles shall be expressed with nominal breaking strength. The width, which serves as auxiliary specification, shall be designed in accordance with contract stipulations and

practical demand.

5.9 The determination of acid and alkali resistance shall comply with the stipulation in GB/T 17632; after acid and alkali treatment, strength retention rate shall be calculated.

5.10 The determination of oxidization resistance shall comply with the stipulation in GB/T 17631. Other than other fibers that are involved in the Standard, take the test parameters of polypropylene (110 °C) as a reference to calculate the strength retention rate after oxidization.

5.11 The determination of UV resistance shall comply with the stipulation under Test Condition 2 in GB/T 31899-2015. After 7 cycle periods, strength retention rate shall be calculated. The determination of the strength shall comply with the stipulation in GB/T 3923.1.

5.12 The determination of dynamic perforation (cone-drop) shall comply with the stipulation in GB/T 17630

5.13 The determination of puncturing strength shall comply with the stipulation in GB/T 19978.

5.14 The determination of water flow capacity in the plane shall comply with the stipulation in GB/T 17633.

5.15 The determination of friction coefficient shall comply with the stipulation in GB/T 17635.1.

5.16 The determination of abrasion resistance shall comply with the stipulation in GB/T 17636.

5.17 The determination of creep performance shall comply with the stipulation in GB/T 17637.

5.18 The determination of splicing strength shall comply with the stipulation in GB/T 16989.

5.19 The determination of constant load elongation and constant elongation load shall comply with the stipulation in GB/T 15788. During the tensile test, measure the elongation when the stipulated load is reached; measure the strength value when the stipulated elongation is reached.

6 Inspection Rules

6.1 Batch Rules In accordance with the batch number of delivery, products of the same variety and specification shall be deemed as an inspection batch.