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

GB/T 17642-2008

**Geosynthetics - Geocomposites made of geononwoven and
geomembrance
(English Translation)**

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1 Scope

This Standard specifies the product classification, specification, code name, technical requirements and quality assessment, test methods, inspection rules, packaging, marks, storage and transportation of geocomposites made of geononwoven and geomembrance.

This Standard applies to geocomposites made of geononwoven and geomembrance that use non-woven geotextiles as the base material and polyethylene, polyvinyl chloride as the membrane materials.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 4667, Textiles - Woven fabrics - Measurement of width of pieces (GB/T 4667-1995, eqv ISO 3932.1976)

GB/T 13760, Geosynthetics - Sampling and preparation of test specimens (GB/T 13760-1992, eqv ISO 9862.1990)

GB/T 13761, Geotextiles - Determination of thickness (GB/T 13761-1992, eqv ISO 9863.1990)

GB/T 13762, Geotextiles - Determination of mass per unit area (GB/T 13762-1992, eqv ISO 9864.1990)

GB/T 13763, Geosynthetics - Determination of trapezoid tearing force

GB/T 14800, Test method for determining the puncture resistance of geotextiles

GB/T 15788, Geotextiles and geotextile-related products - Wide-width tensile test (GB/T 15788-2005, ISO 10319.1993, MOD)

GB/T 16422.1~16422.3, Plastics - Methods of exposure to laboratory light sources

GB/T 16989, Geotextiles - Tensile test for joints/seams by wide-width method (GB/T 16989-1997, neq ISO 10321.1992)

GB/T 17598, Geotextiles and geotextile-related products. Determination for thickness of single layers of multilayer products

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

GB/T 17633, Geotextiles and geotextile-related products - Determination of water flow capacity in their plane

GB/T 17635.1, Geotextiles and geotextile-related products. Determination of friction characteristics. Part 1. Direct shear test

GB/T 17636, Geotextiles and geotextile-related products. Determination of abrasion resistance. Sand paper/sliding block method

GB/T 17637, Geotextiles and geotextile-related products. Determination of the tensile creep and creep rupture behaviour

GB/T 17638, Geosynthetics - Synthetic staple fibers needle punched nonwoven geotextiles

GB/T 17639, Geosynthetics - Synthetic filament spun-bond and needle punched nonwoven geotextiles

GB/T 17643, Geosynthetics - Polyethylene geomembrane

GB/T 19978, Geotextiles and geotextile-related products - Determination of the puncture resistance

GB/T 19979.1, Geosynthetics - Penetration-resist property - Part 1. Determination of static

hydraulic pressure

GB/T 19979.2, Geosynthetics - Penetration-resist property - Part 2.Determination of penetration coefficient

FZ/T 01010, Coated fabrics. Determination of coating peeling strength

3.1 Product classification

Geocomposites made of geononwoven and geomembrance can be classified according to the following methods.

- According to substrate. staple fiber needle-punched geocomposites made of geononwoven and geomembrance, filament spunbonded needle-punched geocomposites made of geononwoven and geomembrance;
- According to the membrane material. polyethylene (PE), polyvinyl chloride (PVC), chlorinated polyethylene (CPE) and other geocomposites made of geononwoven and geomembrance;
- According to the structure. one-cloth-one-membrane, two-cloth-one-membrane, one-cloth-two-membranes, two-cloth-two-membranes, multiple-cloth-multiple- membranes and other geocomposites made of geononwoven and geomembrance.

3.2 Specification

The specifications of the geocomposites made of geononwoven and geomembrance are expressed in terms of nominal breaking strength. Width, mass per unit area and membrane thickness are auxiliary specifications, which are designed according to contract regulations and actual needs.

The recommended series of product specifications are as follows.

Nominal strength (kN/m). 5.0, 7.5, 10, 12, 14, 16, 18, 20, etc.

3.3 Code

The code for geocomposites made of geononwoven and geomembrance is as follows.

- (1) Substrate and layers. SN - Short-fiber needle-punched nonwoven geotextile substrate; FN - Filament spunbonded needle-punched nonwoven geotextile substrate; m is the number of substrate layers. When the number of layers is 1, m can be omitted;
- (2) Membrane material and number of layers. PE, PVC, CPE, etc.; n is the number of membrane layers. When the number of layers is 1, n can be omitted;
- (3) Nominal strength (kN/m);

5.4 Determination of breaking strength elongation. according to GB/T 15788.

5.5 Determination of tear strength. according to GB/T 13763.

5.6 Determination of CBR bursting strength. according to GB/T 14800.

5.7 Determination of dynamic perforation (falling cone). according to GB/T 17630.

5.8 Determination of friction coefficient. according to GB/T 17635.1.

5.9 Determination of in-plane water flow. according to GB/T 17633.

5.10 Determination of creep performance. according to GB/T 17637.

5.11 Determination of antioxidant performance. according to GB/T 17631.

5.12 Determination of acid and alkali resistance. according to GB/T 17632.

5.13 Determination of puncture strength. according to GB/T 19978.

5.14 Determination of peel strength. refer to FZ/T 01010; the width of the specimen is 50mm.

5.15 Determination of joint head/joint seam breaking strength. according to GB/T 16989.

5.16 Determination of UV resistance. according to GB/T 16422.1~16422.3. Usually determine the strength retention rate before and after light. The test time can be selected according to the needs.

5.17 Determination of hydrostatic pressure resistance. according to GB/T 19979.1.

5.18 Determination of permeability coefficient. according to GB/T 19979.2.

5.19 Determination of anti-wear performance. according to GB/T 17636.

5.20 Constant load elongation and constant elongation load. combining with the determination of breaking strength and elongation according to GB/T 15788. During the tensile test, measure the elongation when the specified load is reached and (or) the strength value when the specified elongation is reached.

6.1 Sampling

Products of the same variety and specification according to the delivery batch number shall be regarded as inspection batches. Randomly select the corresponding number of rolls from a batch of products according to the provisions in Table 4. Sample extraction

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