SLOVENSKI STANDARD
SIST EN ISO 13426-2:2005

01-julij-2005

Geotekstilije in geotekstilijam sorodni proizvodi - Moļ notranjih gradbenih spojev - 2. del: Geokompoziti (ISO 13426-2:2005)

Geotextiles and geotextile-related products - Strength of internal structural junctions - Part 2: Geocomposites (ISO 13426-2:2005)

Geotextilien und geotextilverwandte Produkte - Festigkeit produktinterner Verbindungen - Teil 2: Geoverbundstoffe (ISO 13426-2:2005)

Géotextiles et produits apparentés - Résistance des liaisons de structures internes - Partie 2: Géocomposites (ISO 13426-2:2005)

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59.080.70	Geotekstilije	Geotextiles

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ICS 59.080.70

English version

Geotextiles and geotextile-related products - Strength of internal structural junctions - Part 2: Geocomposites (ISO 13426-2:2005)

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This European Standard was approved by CEN on 7 April 2005.

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Foreword

This document (EN ISO 13426-2:2005) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by IBN, in collaboration with Technical Committee ISO/TC 221 "Geosynthetics".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2005, and conflicting national standards shall be withdrawn at the latest by October 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

INTERNATIONAL STANDARD

ISO 13426-2

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Geotextiles and geotextile-related products — Strength of internal structural junctions —

Part 2: Geocomposites

Géotextiles et produits apparentés — Résistance des liaisons de structures internes —

Partie 2: Géocomposites

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13426-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 189, *Geosynthetics*, in collaboration with Technical Committee ISO/TC 221, *Geosynthetics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 13426 consists of the following parts, under the general title *Geotextiles and geotextile-related products — Strength of internal structural junctions*:

— *Part 1: Geocells*

— *Part 2: Geocomposites*

— *Part 3: Geogrids*

Geotextiles and geotextile-related products — Strength of internal structural junctions —

Part 2: Geocomposites

1 Scope

This part of ISO 13426 describes index tests for determining the strength of the internal structural junctions of all geocomposites and of clay geosynthetic barriers.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 9862, *Geosynthetics — Sampling and preparation of test specimens*

ISO 10318, *Geosynthetics — Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10318 and the following apply.

3.1
failure
point at which a geosynthetic ceases to be functionally capable of its intended use

NOTE A material may be considered to have failed without rupture.

3.2
geocomposite
manufactured, assembled material using at least one geosynthetic product among the components, used in contact with soil and/or other materials in geotechnical and civil engineering applications

3.3
junction
point or line where two of the geosynthetics components are connected

3.4
junction strength
peak load attained during the test, reported to the unit width of the product

NOTE The junction strength is expressed in kilonewtons per metre (kN/m).

3.5
peel test
tensile test where two components of a geocomposite are separately clamped and one component is peeled away from the other

3.6
rupture
breaking or tearing apart of a geosynthetic

3.7
shear test
tensile test where two components of a geocomposite are separately clamped and the failure occurs along the plane of the product

4 Principle

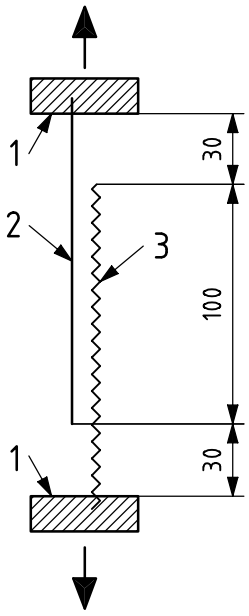
Specimens are tested to measure the resistance of the junctions to different states of stress.

The tests performed for geocomposites are as follows:

— Shear test (Test A — Figure 1): After cutting a test specimen of wide width, one of the two geosynthetics making the junction is delaminated from the other for a certain length at each opposed edge, enough to ensure a good clamping. The delaminated portion is mounted in a clamp of a tensile testing machine, while the other geosynthetic at the opposite edge of the specimen is mounted in the other clamp. The specimen is tested at a constant rate of strain, until shear failure of the junction or tensile failure of one of the geosynthetics occurs. The corresponding tensile shear resistance is measured and recorded.

— Peel test (Test B — Figure 2): After cutting a a test specimen of wide width, one of the two geosynthetics making the junction is delaminated from the other for a certain length at one edge, enough to ensure a good clamping. The delaminated portions of the two geosynthetics are each mounted in one clamp of a tensile testing machine. The specimen is tested until failure occurs. The corresponding peeling resistance is measured and recorded.

Dimensions in millimetres

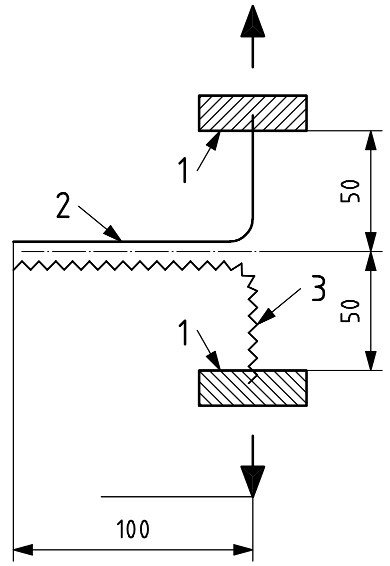


Key

1 clamp
2 first geosynthetic component
3 second geosynthetic component

Figure 1 — Shear test

Dimensions in millimetres



Key

1 clamp

2 first geosynthetic component

3 second geosynthetic component

Figure 2 — Peel test

5 Conditioning atmosphere

The test specimens shall be conditioned in the standard atmosphere for testing at (20 ± 2) °C and (65 ± 5) % relative humidity, as defined in ISO 554.

The specimens can be considered to be conditioned when the change in mass in successive weighings made at intervals of not less than 2 h does not exceed 0,25 % of the mass of the test specimen.

Conditioning and/or testing in a standard atmosphere may only be omitted when it can be shown that results obtained for the same specific type of product (both structure and polymer type) are not affected by changes in temperature and humidity exceeding these limits. This information shall be included in the test report.

6 Number of specimens to be tested

Five specimens shall be tested for each product for each of the machine and cross-machine directions and for each structural junction (if the geocomposite is made up of three or more different layers of geosynthetics and/or mineral materials).

7 Test specimens

7.1 Selection of test specimens

Take specimens in accordance with ISO 9862.

7.2 Dimension of test specimens

Cut specimens according to the shapes and dimensions shown in Figures 3 and 4, respectively for Tests A or B.

To monitor slippage and to make sure the applied force remains parallel to the longitudinal axis of the specimen, draw two lines on the full width of the test specimen. These lines shall be parallel to each other,

