



SLOVENSKI STANDARD
oSIST prEN ISO 13426-2:2023
01-julij-2023

**Geotekstilije in geotekstilijam sorodni proizvodi - Moč notranjih gradbenih spojev -
2. del: Geokompoziti (ISO/DIS 13426-2:2023)**

Geotextiles and geotextile-related products - Strength of internal structural junctions -
Part 2: Geocomposites (ISO/DIS 13426-2:2023)

Geotextilien und geotextilverwandte Produkte - Festigkeit produktinterner Verbindungen
- Teil 2: Geoverbundstoffe (ISO/DIS 13426-2:2023)

Géotextiles et produits apparentés - Résistance des liaisons de structures internes -
Partie 2: Géocomposites (ISO/DIS 13426-2:2023)

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ICS:

59.080.70 Geotekstilije Geotextiles

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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*

ICS: 59.080.70

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 221 *Geosynthetics*.

This second edition cancels and replaces the first edition (ISO 13426-2:2005) which has been technically revised.

The main changes are as follows:

- In [clause 9](#) modification of the calculation of the junction strength for tests with multiple peaks

A list of all parts in the ISO 13426 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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

Part 2: Geocomposites

1 Scope

This document describes index tests for determining the strength of the internal structural junctions under different loading conditions of all geocomposites and of clay geosynthetic barriers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 10318-1, *Geosynthetics — Part 1: Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10318-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

failure

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

Note 1 to entry: 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 1 to entry: The junction strength is expressed in kilonewtons per metre (kN/m).

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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

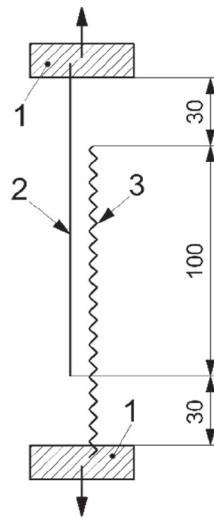
4 Principle

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

The tests performed for geocomposites are as follows:

- **Method A (shear test)** 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 (see [figure 1](#)). 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 delaminated portion that is not inserted in the clamp shall not interfere with the clamp during the test, and it shall be cut in case it cannot be bent. The specimen is tested at a constant rate of extension, until shear failure of the junction or tensile failure of one of the geosynthetics occurs. The corresponding tensile shear resistance is measured and recorded.
- **Method B (peel test):** 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 one edge, enough to ensure a good clamping (see [figure 2](#)). The delaminated portions of the two geosynthetics are each mounted in one clamp of a tensile testing machine. The specimen is tested at a constant rate of extension, until failure occurs. The corresponding peeling resistance is measured and recorded.

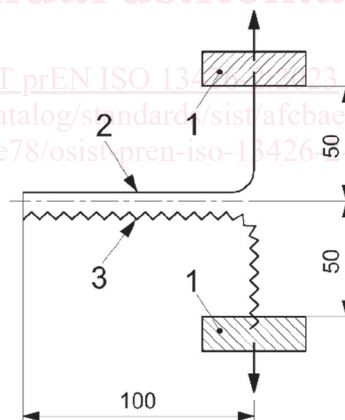
Dimensions in millimetres

**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 $(20 \pm 2) ^\circ\text{C}$ and $(65 \pm 5) \%$ 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.

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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 Test specimen

6.1 Number

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).

6.2 Sampling

Take specimens in accordance with ISO 9862.

6.3 Dimension

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, perpendicular to the test direction and at equal distances from the edges of the specimen. Their distance from each other shall be (155 ± 2) mm for Method A and (95 ± 2) mm for Method B.

For specimens having discrete structural junctions (i.e. welded points, stitching), it may be necessary to increase the dimensions of the test specimen to include at least one complete junction. Care shall be taken, when delaminating one geosynthetic from the other, not to change or reduce the characteristics of the junction.