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**Geotextiles and geotextile-related products. — Strength of
internal structural junctions — 2**

**Part 2:
Geocomposites**

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

Partie 2: Géocomposites

FDIS stage

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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
E-mail: copyright@iso.org
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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 document 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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This document was prepared by Technical Committee ISO/TC 221 *Geosynthetics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 189, *Geotextiles and geotextile-related products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

~~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,~~ **In Clause 9,** the calculation of the junction strength for tests with multiple peaks has been modified.

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.

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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 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

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).

3.5

peel test

tensile test where two components of a *geocomposite* (3.2)(3.2) 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* (3.2)(3.2) are separately clamped and the *failure* (3.4)(3.1) occurs along the plane of the product

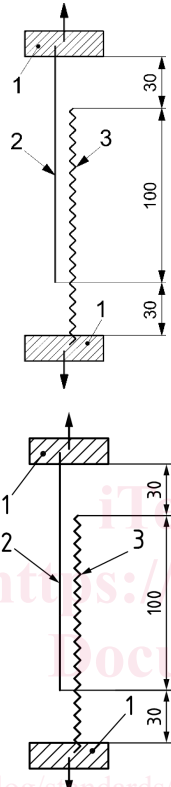
4 Principle

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)-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)-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



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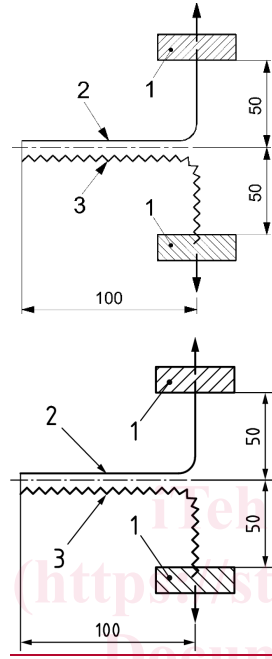
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- Key
- 1 clamp
 - 2 first geosynthetic component
 - 3 second geosynthetic component

Figure 1 — Clamping of test specimen in a shear test

Dimensions in millimetres



- Key**
- 1 clamp
 - 2 first geosynthetic component
 - 3 second geosynthetic component

Figure 2 — Clamping of test specimen in a 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 are 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.