SLOVENSKI STANDARD
SIST EN 13719:2002

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Geotekstilije in geotekstilijam sorodni proizvodi - Ugotavljanje učinkovitosti dolgotrajne zaščite geotekstilij v primeru geotekstilnih ovir

Geotextiles and geotextile-related products - Determination of the long term protection efficiency of geotextiles in contact with geosynthetic barriers

Geotextilien und geotextilverwandte Produkte - Bestimmung der langfristigen Schutzwirksamkeit von Geotextilien im Kontakt zu Dichtungsbahnen

Géotextiles et produits apparentés - Détermination de l'efficacité de protection a long terme des géotextiles en contact avec les barrieres géosynthétiques

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59.080.70 Geotekstilije Geotextiles

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English version

Geotextiles and geotextile-related products - Determination of the long term protection efficiency of geotextiles in contact with geosynthetic barriers

Géotextiles et produits apparentés - Détermination de l'efficacité de protection à long terme des géotextiles en contact avec les barrières géosynthétiques

Geotextilien und geotextilverwandte Produkte - Bestimmung der langfristigen Schutzwirksamkeit von Geotextilien im Kontakt mit geosynthetischen Dichtungsbahnen

This European Standard was approved by CEN on 28 July 2002.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Foreword

This document EN 13719:2002 has been prepared by CEN/TC 189 "Geosynthetics", the secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by March 2003, and conflicting national standards shall be withdrawn at the latest by March 2003.

Annex A is normative. Annex B is informative.

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

1 Scope

This European Standard is an index test used to determine the efficiency with which a geotextile or geotextile-related product will protect a geosynthetic barrier or other contact surface against the mechanical long term effects of static point loads.

The test is performed on the geotextile or geotextile-related product in isolation. It measures the strains experienced by a geotextile or geotextile-related product in contact with a deformable pad.

NOTE Other properties relevant to the protection of geosynthetic barriers against differing actions are covered by other standards, e.g. dynamic perforation is covered in EN 918.

A related performance test simulating specific site conditions is described in annex B.

2 Normative references

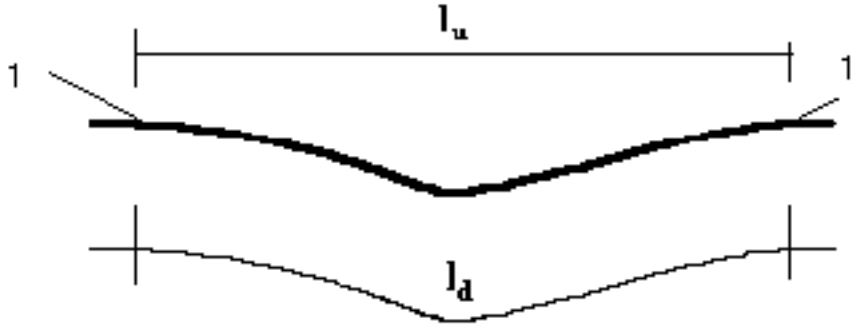
This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 963	*Geotextiles and geotextile-related products - Sampling and preparation of test specimens.*
EN ISO 10320	*Geotextiles and geotextile-related products - Identification on site (ISO 10320:1999).*
EN 12588	*Lead and lead alloys - Rolled lead sheet for building purposes.*
ISO 554	*Standard atmospheres for conditioning and/or testing – Specifications.*
ISO 7619	*Rubber - Determination of indentation hardness by means of pocket hardness meters.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
local strain
difference between the deformed length (l_d) of a straight line between two points on either side of a deformation and the undeformed length (l_u) between the same two points divided by the undeformed length (see Figure 1)



Key
1 Limit of deformation

Figure 1 – Local strain measurement of a single deformation

4 Principle

Load is applied through a simulated standard aggregate on to the geotextile specimen, which is supported on a simulated standard subgrade for a standard time. The local strain in the lower surface of the geotextile is measured and used to determine the protection efficiency.

5 Apparatus (see also Figure 2)

5.1 Cylinder

A smooth sided steel cylinder having an internal diameter between 300 mm and 500 mm.

NOTE The cylinder can be in sections bolted together at flanged joints to facilitate setting up and dismantling.

5.2 Three point support

Three point support load cells or pressure gauges that support the lower steel plate and record the load applied through the system accurate to 1% of the applied load.

5.3 Lower steel plate

20 mm minimum thickness mild steel plate with a diameter 4 mm less than that of the cylinder with a tolerance of ± 1 mm to allow it to vertically move freely within the cylinder.

5.4 Dense rubber pad

A (25 ± 1) mm thickness rubber pad having a diameter similar to the lower steel plate and a hardness of (50 ± 5) Shore A, determined in accordance with ISO 7619. The rubber pad should be checked for hardness on a grid no greater than 20 mm at intervals not exceeding three months. If the pad is outside the hardness tolerance at any location or exhibits signs of permanent mechanical damage, it shall not be used.

5.5 Metal sheet

A circular soft sheet metal disc such as 1,3 mm thick grade 3 lead to EN 12588 or similar with deformation characteristics and thickness in accordance with the requirements of annex A and with a diameter similar to that of the lower steel plate.

Prior to incorporation in the test the metal disc is to have a flatness such that a gauge of 0,05 mm cannot be inserted between the disc and a straight edge placed across any diameter.

5.6 Simulated standard aggregate

20 mm diameter steel balls to a minimum depth of 150 mm. The balls are to be used for a maximum of 1 000 tests.

5.7 Applied stress

Means of constantly applying a uniform normal stress up to 1 400 kN/m^2 to the upper surface of the simulated standard aggregate over a period of up to 1 000 h.

5.8 Timing device

Means of timing the duration of the test accurate to ± 1 % of the test duration.

5.9 Temperature recording

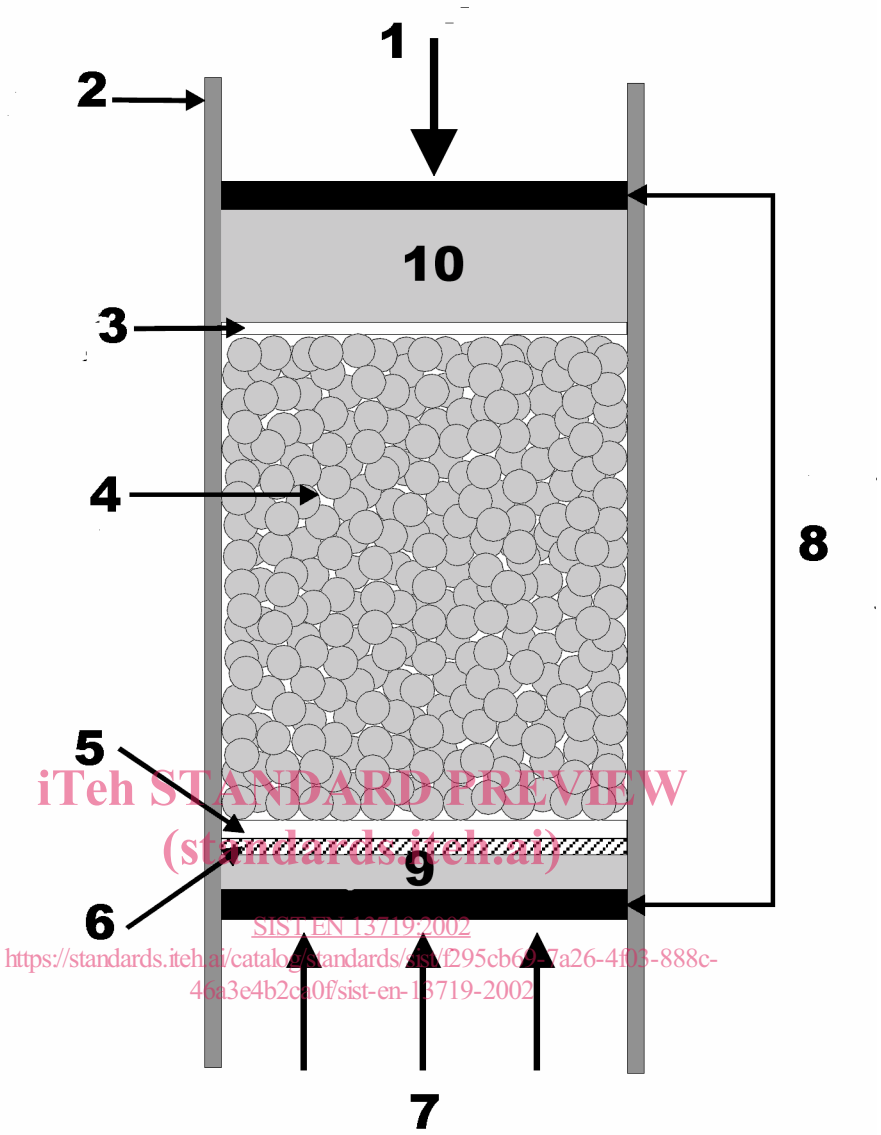
A maximum/minimum thermometer with an accuracy of ± 1 °C or a thermohydrograph indicating temperature to the same accuracy.

5.10 Humidity recording

A thermohydrograph or other means of recording relative humidity with an accuracy of ± 5 %.

5.11 Deformation measurement

Means of measuring the deformed length and undeformed length of a depression in the lead plate. Simultaneous measurement horizontally and vertically to an accuracy of 0,01 mm. If a dial gauge is to be used the tip in contact with the metal sheet shall have a diameter of (2,0 ± 0,2) mm.



Key

1 Applied load
2 Cylinder
3 Geotextile separator
4 Simulated standard aggregate
5 Geotextile test specimen
6 Metal sheet
7 Load cells
8 Upper and lower steel plates
9 Dense rubber pad
10 Sand

Figure 2 – Test apparatus