SLOVENSKI STANDARD
SIST EN 13719:2016

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Nadomešča:
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SIST EN 13719:2002/AC:2005

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 mit geosynthetischen Dichtungsbahnen

Géosynthétiques - Détermination de l'efficacité de protection à long terme des géosynthétiques en contact avec les géomembranes

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ICS:

59.080.70	Geotekstilije	Geotextiles

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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English Version

Geosynthetics - Determination of the long term protection efficiency of geosynthetics in contact with geosynthetic barriers

Géosynthétiques - Détermination de l'efficacité de protection à long terme des géosynthétiques en contact avec les géomembranes

Geokunststoffe - Bestimmung der langfristigen Schutzwirksamkeit von Geokunststoffen im Kontakt mit geosynthetischen Dichtungsbahnen

This European Standard was approved by CEN on 20 February 2016.

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European foreword

This document (EN 13719:2016) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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

This document supersedes EN 13719:2002.

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

1 Scope

This European Standard is an index test used to determine the efficiency with which a geosynthetic 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 geosynthetic product in isolation. It measures the strains experienced by a geosynthetic 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 ISO 13433.

A related performance test simulating specific site conditions is described in Annex B (informative).

2 Normative references

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

EN 12588, *Lead and lead alloys — Rolled lead sheet for building purposes*

EN ISO 139, *Textiles — Standard atmospheres for conditioning and testing (ISO 139)*

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

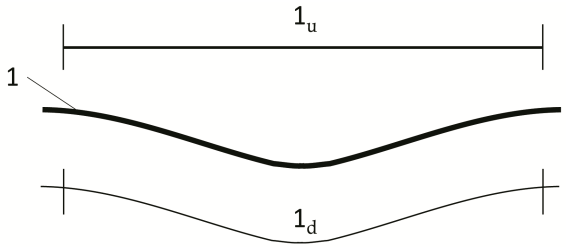
EN ISO 10320, *Geotextiles and geotextile-related products — Identification on site (ISO 10320)*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

3 Terms and definitions

For the purposes of this document, 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 geosynthetic specimen, which is supported on a simulated standard subgrade for a standard time. The local strain in the lower surface of the geosynthetic is measured and used to determine the protection efficiency.

5 Apparatus

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 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. The lower steel plate shall be supported in a way that the effective normal stress can be measured to an accuracy of 1 %.

5.3 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 7619-1. The rubber pad should be checked for hardness on a grid no greater than 20 mm at intervals not exceeding 12 months. If the pad is outside the hardness tolerance at any location or exhibits signs of permanent mechanical damage, it shall not be used.

5.4 Lead sheet

A circular lead disc shall be used. It shall have a thickness of (1,3 ± 0,1) mm, 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 lead disc shall 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.

5.5 Simulated standard aggregate

20 mm diameter steel balls to a minimum depth of 150 mm. The balls shall not show any visible signs of damage.

5.6 Applied stress

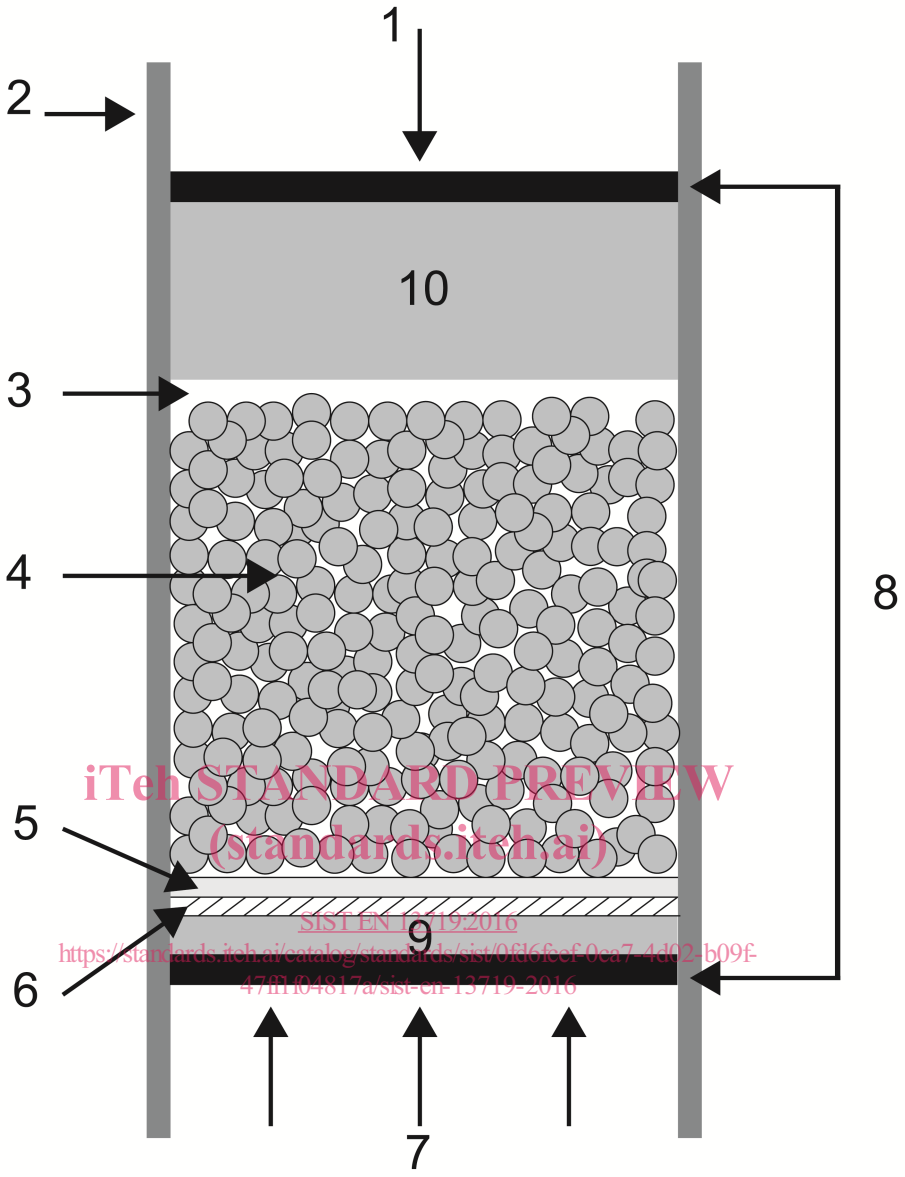
Means of constantly applying the required uniform normal stresses to an accuracy of ± 5 % as registered by the load cells or pressure gauges beneath the lower steel plate over a period of up to 1000 h.

5.7 Timing device

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

5.8 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 geosynthetic test specimen
6 lead sheet
7 load cells
8 upper and lower steel plates
9 dense rubber pad
10 sand

Figure 2 — Test apparatus