

Geosynthetic barriers - Determination of permeability to liquids

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14150:2006 sisaldab Euroopa standardi EN 14150:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 31.07.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14150:2006 consists of the English text of the European standard EN 14150:2006.</p> <p>This document is endorsed on 31.07.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This European Standard specifies a method for measuring the steady-state liquid flow through a geosynthetic barrier, used to contain liquids in long-term applications.</p>	<p>Scope: This European Standard specifies a method for measuring the steady-state liquid flow through a geosynthetic barrier, used to contain liquids in long-term applications.</p>
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Võtmesõnad: definitions, determination, geotextiles, hydrolytic stability, liquids, permability, synthetic, testing, water proof sheetings

English Version

Geosynthetic barriers - Determination of permeability to liquids

Géomembranes - Détermination de la perméabilité aux
liquides

Geosynthetische Dichtungsbahnen - Bestimmung der
Flüssigkeitsdurchlässigkeit

This European Standard was approved by CEN on 4 May 2006.

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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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 14150:2006) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by IBN/BIN.

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 December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies a method for measuring the steady-state liquid flow through a geosynthetic barrier, used to contain liquids in long-term applications.

The test method and described apparatus allow the measurement of flows accurately down to $10^{-6} \text{ m}^3/\text{m}^2/\text{day}$. In particular circumstances where testing indicates that values obtained for a geosynthetic barrier lie below the threshold of sensitivity of this test method, then the value of liquid flow is declared as being less than $10^{-6} \text{ m}^3/\text{m}^2/\text{day}$.

Due to its long duration this test method is not suitable for production control testing.

Geosynthetic clay liners cannot be tested with this apparatus.

2 Normative references

Not applicable

3 Principle

A differential hydraulic pressure is applied between the two sides of a geosynthetic barrier. It is kept constant during the test at 100 kPa, the upstream pressure being set to 150 kPa, and the downstream pressure to 50 kPa.

The flow through the geosynthetic barrier is calculated from the variations of the liquid volume measured on both sides of the geosynthetic barrier.

NOTE 1 This test is conducted with water, but can also be performed with other liquids, providing chemical resistance and compatibility of the apparatus is ensured.

NOTE 2 In the light of laboratory experience, test procedural improvement and equipment enhancement the sensitivity threshold of the test procedure should be reviewed and the applicability of the test procedure to the product permeability assessed at regular intervals, not exceeding 12 months.

4 Apparatus

4.1 Cell

The two-part cell (see Figure 1) is made of stainless steel. The cell shall resist to oxidation during long-term immersion. In each part of the cell, a cavity allows to apply a hydraulic pressure. A porous disc placed in the downstream cavity prevents deformations of the geosynthetic barrier.