

Geosynthetics - Screening test method for determining chemical resistance for landfill applications

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determining chemical resistance for landfill
applications

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14414:2004 sisaldab Euroopa standardi EN 14414:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.08.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14414:2004 consists of the English text of the European standard EN 14414:2004.</p> <p>This document is endorsed on 27.08.2004 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 describes a test method to determine the chemical resistance of geosynthetics to liquid municipal, agricultural and industrial wastes, using a laboratory immersion procedure. The procedure includes three chemical compounds chosen to initiate known types of chemical degradation, and a synthetic leachate representative of a landfill containing domestic waste. The procedure can also be applied using a site-specific leachate.</p>	<p>Scope: This European Standard describes a test method to determine the chemical resistance of geosynthetics to liquid municipal, agricultural and industrial wastes, using a laboratory immersion procedure. The procedure includes three chemical compounds chosen to initiate known types of chemical degradation, and a synthetic leachate representative of a landfill containing domestic waste. The procedure can also be applied using a site-specific leachate.</p>
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ICS 59.080.70

English version

Geosynthetics - Screening test method for determining chemical resistance for landfill applications

Géosynthétiques - Méthode d'essai sélective permettant de déterminer la résistance chimique pour l'utilisation dans les centres de stockage de déchets

Geokunststoffe - Auswahlprüfverfahren zur Bestimmung der chemischen Beständigkeit bei der Anwendung in Deponien

This European Standard was approved by CEN on 2 February 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 14414:2004) has been prepared by Technical Committee 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 November 2004, and conflicting national standards shall be withdrawn at the latest by November 2004.

This document includes a Bibliography.

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

Introduction

In landfills and contaminated soil geosynthetics can be in contact with leachates or other potentially aggressive chemicals. This European Standard defines a method for testing the resistance of the geosynthetics to these liquids.

The standard does not purport to address all of the safety problems, if any, associated with its use.

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1 Scope

This European Standard describes a test method to determine the chemical resistance of geosynthetics to liquid municipal, agricultural and industrial wastes, using a laboratory immersion procedure.

The procedure includes three chemical compounds chosen to initiate known types of chemical degradation, and a synthetic leachate representative of a landfill containing domestic waste. The procedure can also be applied using a site-specific leachate. These options are denoted by methods A to E:

- method A: hydrolysis under acidic conditions;
- method B: hydrolysis under basic conditions;
- method C: solvation/swelling;
- method D: synthetic leachate;
- method E: any site-specific leachate;

The method of evaluation (see clause 9) differs according to whether the material is a geotextile, a polymeric or bituminous geosynthetic barrier, or a geosynthetic clay barrier. In the case of geosynthetic clay barriers only the polymeric component will be tested.

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 ISO 527-1	<i>Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1:1993 including Corr 1:1994)</i>
EN ISO 527-3	<i>Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets (ISO 527-3:1995)</i>
prEN ISO 10318:2000	<i>Geosynthetics - Geotextiles, geotextile-related products, geomembranes and geosynthetic clay liners - Terms and their definitions (ISO/DIS 10318:2000)</i>
EN 12226:2000	<i>Geotextiles and geotextile-related products - General tests for evaluation following durability testing</i>
ISO 554	<i>Standard atmospheres for conditioning and/or testing - Specifications</i>

3 Terms and Definitions

For the purposes of this European Standard, the terms and definitions given in prEN ISO 10318:2000 apply.

4 Principle

Samples are immersed at 50°C for 56 days in chemical solutions which represent the chemical reactions characterizing the action of landfill leachates. Samples are evaluated by measuring the change in elongation at break and by visual inspection.

NOTE Resistance to oxidation and leaching of stabilizers are the subject of ENV ISO 13438 and EN 14415 respectively.