SLOVENSKI STANDARD
SIST EN ISO 13438:2005

01-marec-2005

Geotekstilije in geotekstilijam sorodni izdelki – Preskusna presejalna metoda za ugotavljanje odpornosti proti oksidaciji (ISO 13438:2004)

Geotextiles and geotextile-related products - Screening test method for determining the resistance to oxidation (ISO 13438:2004)

Geotextilien und geotextilverwandte Produkte - Auswahlprüfverfahren zur Bestimmung der Oxidationsbeständigkeit (ISO 13438:2004)

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Géotextiles et produits apparentés - Méthode de détermination de la résistance a l'oxydation (ISO 13438:2004)

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Ta slovenski standard je istoveten z: **EN ISO 13438:2004**

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59.080.70 Geotekstilije Geotextiles

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EUROPEAN STANDARD

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Geotextiles and geotextile-related products - Screening test method for determining the resistance to oxidation (ISO 13438:2004)

Géotextiles et produits apparentés - Méthode de détermination de la résistance à l'oxydation (ISO 13438:2004)

This European Standard was approved by CEN on 4 October 2004.

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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 document (EN ISO 13438:2004) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 221 "Geosynthetics".

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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This document supersedes ENV ISO 13438:1999.

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.

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SIST EN ISO 13438:2005

Contents

Page

Foreword ... iv

Introduction ... v

1 Scope ... 1

2 Normative references ... 1

3 Methods A1, A2, B1 and B2 ... 1
3.1 Principle ... 1
3.2 Specimens ... 2
3.3 Apparatus ... 2
3.4 Conditioning ... 2
3.5 Test procedure ... 2

4 Methods C1 and C2 ... 3
4.1 Principle ... 3
4.2 Apparatus and reagents ... 3
4.3 Test procedure ... 4

5 Determination of mechanical properties ... 5

6 Test report ... 6

Annex A (informative) **Background information on oxidation processes and oxidation measurements** ... 7

Bibliography ... 9

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(standards.iteh.ai)
SIST EN ISO 13438:2005
https://standards.iteh.ai/catalog/standards/sist/4da66b4f-28bd-4ba8-8986-d16a9409acf5/sist-en-iso-13438-2005

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

ISO 13438 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 189, *Geosynthetics* in collaboration with Technical Committee ISO/TC 221, *Geosynthetics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Introduction

In many civil engineering applications geotextiles and geotextile-related products may come into contact with water or aqueous solutions present in the soil environment. At the same time, in specific parts of the construction, they may be exposed to oxygen, giving rise to oxidative degradation processes. These processes are usually very slow.

Polyolefin materials such as polypropylene (PP) and polyethylene (PE) are inherently more sensitive to oxidation than those based on polyethylene terephthalate (PET). This behaviour can be improved very effectively by the use of appropriate stabilizing additives.

It is the purpose of this international standard to provide a method for screening the resistance to oxidation of geotextiles and geotextile-related products in service up to 25 years. In order to achieve the sufficiently short exposure times needed for screening tests, it is necessary to accelerate the oxidative degradation process. This acceleration can be achieved either by raising the temperature or by increasing the concentration of the active reaction partner. Raising the temperature may lead to the oxidation rate being limited by oxygen diffusion, thus invalidating the acceleration. This applies particularly to materials with a low surface-to-volume ratio and less to nonwovens made from fine fibres. Two methods are therefore proposed.

Methods A1, A2, B1 and B2 use temperature alone as the accelerating factor.

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Methods C1 and C2 operate at moderately high temperatures and at the same time the oxygen concentration is increased by using pure oxygen at high pressure.

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Each test may be performed at a shorter duration for non-reinforcing materials (A1, B1, C1) or for a longer duration for reinforcing materials (A2, B2, C2).

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