SLOVENSKI STANDARD
oSIST prEN ISO 12960:2019

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Geotekstilije in geotekstilijam sorodni izdelki - Preskusne presejalne metode za ugotavljanje odpornosti proti kislim in alkalnim tekočinam (ISO/DIS 12960:2018)

Geotextiles and geotextile-related products - Screening test method for determining the resistance to acid and alkaline liquids (ISO/DIS 12960:2018)

Geotextilien und geotextilverwandte Produkte - Screening-Prüfverfahren zur Bestimmung der Beständigkeit gegenüber sauren und alkalischen Flüssigkeiten (ISO/DIS 12960:2018)

Géotextiles et produits apparentés - Méthode d'essai sélective pour la détermination de la résistance aux liquides acides et alcalines (ISO/DIS 12960:2018)

Ta slovenski standard je istoveten z: **prEN ISO 12960**

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59.080.70	Geotekstilije	Geotextiles

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Geotextiles and geotextile-related products — Screening test method for determining the resistance to acid and alkaline liquids

Géotextiles et produits apparentés — Méthode d'essai sélective pour la détermination de la résistance aux liquides acides et alcalines

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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 221, *Geosynthetics*.

This first edition cancels and replaces ISO/TR 12960, which has been technically revised.

The main changes compared to the previous edition are as follows:

This document consolidates the previous editions of ISO/TR 12960 and EN 14030, which are both replaced by this standard.

A list of parts in the ISO 12960- series can be found on the ISO website.

Introduction

In nearly all applications geotextiles and geotextile-related products (geotextile products) may be in contact with aqueous solutions of acids, bases or dissolved oxygen. The resistance of geotextile products to these chemicals depends on the one hand on polymer formulation, processing, textile structure and the presence of existing damage and on the other hand on the composition of the liquid and in situ conditions such as temperature, pressure and the presence of further mechanical stress.

It is the purpose of this standard to provide a method of screening (index testing) the resistance of geotextile products to these acids and bases.

Since an index test requires exposure times that are short compared to the expected lifetimes of geotextile products, it is necessary to accelerate the process. The data obtainable are suitable for screening but not for deriving performance data such as lifetime, unless supported by further evidence.

NOTE This standard should be used with reference to CR ISO 13434.

Geotextiles and geotextile-related products — Screening test method for determining the resistance to acid and alkaline liquids

1 Scope

This standard specifies methods for screening the resistance of geotextile products to liquids while not subjecting them to external mechanical stress.

The standard is applicable to all geotextiles and geotextile related products. Method A applies particularly to polyamides and method B to polyesters and polyamides. The test results should be interpreted in the context of site conditions.

NOTE This standard only considers conditions where the specimens are fully immersed in the liquids. Though outside the scope of this standard, the test conditions may be modified to accommodate particular applications, e. g. gaseous media. This standard does not preclude use for test specimens that are pre-treated by some method, e. g. by weathering, aqueous extraction conditions or installation damage.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12226, *Geotextiles and geotextile-related products — General tests for evaluation following durability testing*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Principle

Test specimens are completely immersed in a test liquid for a given test duration at a fixed temperature. The properties of the test specimens are tested before and after immersion and if applicable after drying, and wherever possible, the test results are compared with those of control specimens stored under reference conditions.

5 General requirements and procedure

5.1 Apparatus

A container, e.g. a pneumatic vessel, is to be used, equipped with:

— a sealing lid or equivalent device and if necessary a reflux condenser or equivalent device to restrict evaporation of volatile components;

— a stirring or equivalent device to maintain homogeneity of the liquid and the exchange of matter between the liquid and the specimens;

— specimen holders to ensure correct placing of the specimens (see 5.6.2), the free distance between specimens being at least 10 mm;

— at least one closable aperture in the lid for access to control the composition of the liquid;

— a device for passing air into the liquid to ensure full air saturation.

The container shall be large enough for the test liquid (see 5.6.1), which shall be held at constant temperature (see 5.3).

The material of the container and equipment shall be resistant to the test chemicals. Such materials are in general borosilicate glass or stainless steel.

5.2 Test liquids

Two types of test liquids are to be used:

— an inorganic acid: 0,025 M sulfuric acid, with 1 mMol ferrisulfate and 1 mMol ferrosulfate added (method A);

— an inorganic base: calcium hydroxide ($Ca(OH)_2$), used as a saturated suspension, i.e. approximately 2,5 grams per litre (method B).

Chemicals or reagent of analytical grade should be used. Water shall comply with ISO 3696:1987, grade 3.

National safety regulations for handling of chemicals and for disposal of test liquids shall be followed.

NOTE For any test medium it is an important condition that its composition remains constant during the test exposure. This may be complicated if the concentration of any active component is low or if the liquid is not a stable one-phase system. In such cases the concentration should be monitored and if possible adjusted or replaced on a regular basis. Attention should be given also to possible catalytic or synergistic effects, including effects of simultaneous chemical and mechanical stresses (e.g. environmental stress cracking in polyolefins). The choice of the concentration of the active species is governed by the aim to avoid significant changes of the concentration during the test and to accelerate the reaction but to avoid a change in the active mechanism by using too high a concentration.

5.3 Test temperatures

The test temperature shall be (60 ± 1) °C for each method.

5.4 Test duration

The test duration shall be three days for each method.

5.5 Specimens

Reference is made to EN 12226.